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ABSTRACT

Designed to investigate the effects of three motivational treatments given to selected teachers, this study measured the effects of the treatments in terms of pupil reading acheivement and staff teachers' perceptions of selected interpersonal variables. Two hypotheses were tested: pupils in the control group and pupils in the experimental groups will not differ significantly in reading skill mastery, and teachers in the control group and teachers in the experimental groups will not change their perceptions of selected interpersonal variables. A total of 1,703 pupils and 69 staff teachers from 15 schools in Connecticut, Illinois, Minnesota, and Wisconsin participated in the entire study. Conclusions were that the percentage of pupils mastering skills was significantly higher on the posttest than on the pretest, a comparison between the gains in the percentage of pupils mastering skills between treatment groups was not significantly different except for one skill, and the analysis of the teacher questionnaires revealed that for all of the treatment groups and on all of the measures of teachers' perceptions there were no significant changes. (Author/RB)

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Technical Report No. 268

THE EFFECTS OF MONITORING PUPIL PERFORMANCE AND TWO INCENTIVE TREATMENTS FOR TEACHERS ON PUPILS' READING SKILL DEVELOPMENT AND TEACHERS' ATTITUDES

Report from the Project on Conditions of School Learning and Instructional Strategies

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STATEMENT OF FOCUS

Individually Guided Education (IGE) is a new comprehensive system of elementary education. The following components of the IGE system are in varying stages of development and implementation: a new organization for instruction and related administrative arrangements; a model of instructional programing for the individual student; and curriculum components in prereading, reading, mathematics, motivation, and environmental education. The development of other curriculum components, of a system for managing instruction by computer, and of instructional strategies is needed to complete the system. Continuing programmatic research is required to provide a sound knowledge base for the components under development and for improved second generation components. Finally, systematic implementation is essential so that the products will function properly in the IGE schools.

The Center plans and carries out the research, development, and implementation components of its IGE program in this sequence: (1) identify the needs and delimit the component problem area; (2) assess the possible constraints--financial resources and availability of staff; (3) formulate general plans and specific procedures for solving the problems; (4) secure and allocate human and material resources to carry out the plans; (5) provide for effective communication among personnel and efficient management of activities and resources; and (6) evaluate the effectiveness of each activity and its contribution to the total program and correct any difficulties through feedback mechanisms and appropriate management techniques.

A self-renewing system of elementary education is projected in each participating elementary school, i.e., one which is less dependent on external sources for direction and is more responsive to the needs of the children attending each particular school. In the IGE schools, Center-developed and other curriculum products compatible with the Center's instructional programing model will lead to higher morale and job satisfaction among educational personnel. Each developmental product makes its unique contribution to IGE as it is implemented in the schools. The various research components add to the knowledge of Center practitioners, developers, and theorists.

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As the task of completing this study is finished, I feel a need to acknowledge certain people who have helped me in different ways.

My parents have always stood by me in times of need. They have encouraged me to be not only creative, independent, tenacious, and self-confident, but also patient and understanding. I hope they are happy.

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ABSTRACT

This study was planned and implemented to investigate the effects of three motivational treatments given to selected teachers. The effects of the treatments were measured in terms of changes in (a) pupil reading achievement, and (b) staff teachers' perceptions of selected interpersonal variables. The three motivational treatments were characterized by (a) pupil reading achievement monitored without feedback to teachers, (b) social incentives given to teachers, and (c) money incentives given to teachers. The study was characterized by a pretest-posttest control group design with randomization. The effects of the three motivational treatments were compared in one control and three experimental groups.

The primary contribution of this study is that an attempt was made to combine and show relationships between teacher incentive procedures and (a) observable and measurable pupil reading skill achievement, and (b) changes in the teachers' perceptions of interpersonal variables.

Two hypotheses were tested. They are:

1. Pupils in the control group and pupils in the experimental groups will not differ significantly in reading skill mastery.

2. Teachers in the control group and teachers in the experimental groups will not change their perceptions of selected interpersonal variables.

The population from which the participating schools was drawn included schools in Connecticut, Illinois, Minnesota, and Wisconsin. Fifteen schools, a total of 1,703 pupils and 69 staff teachers participated until the conclusion of the study.

The Multiunit School-Elementary (MUS-E) provided the administrative model and an organization of instruction for the purpose of implementing this study.

In addition, the school staffs which participated in this study were implementing the Wisconsin Design for Reading Skill Development (WDRSD). The WDRSD has four fundamental purposes: (a) to identify and describe behaviorally the skills which appear to be essential for competence in reading; (b) to assess individual pupil's skill development status; (c) to manage instruction of children; and (d) to monitor each pupil's progress.

All tests administered as pretest and posttest measures were optically scanned and computer scored by Interpretive Scoring Systems, a division of National Computer Systems, Inc., Minneapolis, Minnesota.

Several selected sections of an instrument designed by the Cooperative Project in Educational Development were used to measure the teachers' perceptions of four areas of interpersonal variables on a pre- and post-questionnaire.

Each staff was assigned to one of four randomly selected treatment groups. The control group completed the pre-questionnaire and administered the Wisconsin Tests of Reading Skill Development (WTRSD) to the pupils and had no further contact with the investigator. In the monitoring group, the pupil achievement was monitored by the

investigator. Teachers in the instructional feedback group were given informational feedback and social incentives. Teachers in the monetary incentive group were provided with money incentives directly related to the reported number of reading skills mastered by the pupils.

A multiple analysis of variance and descriptive statistics were examined to determine effects of the treatments.

Three main conclusions of this study follow.

1. In all of the treatment groups and on all but three of the WTRSD measures, the percentage of pupils mastering skills was significantly higher at the $p<.0001$ level on the posttest than on the pretest.

2. A comparison between the gains in the percentage of pupils mastering skills between treatment groups was not significantly different at the $p<.05$ level except for one skill.

3. The analysis of the teacher questionnaires revealed that for all of the treatment groups and on all of the measures of teachers' perceptions there were no significant changes at the $p<.05$ level.

CHAPTER I

SCOPE AND BACKGROUND OF THE STUDY

The primary purpose of this study was to investigate the effects of three motivational treatments given to selected teachers. The effects of the treatments were measured in terms of changes in (a) pupil reading achievement and (b) staff teachers' perceptions of selected interpersonal variables. The three motivational treatments were characterized by (a) pupil reading achievement monitored without feedback to teachers, (b) social incentives given to teachers, and (c) money incentives given to teachers. The study was characterized by a pretest-posttest control group design with randomization. The effects of the three motivational treatments were compared in one control and three experimental groups.

Background of the Study

The effects of various motivational approaches on teacher effectiveness have been studied. References to specific studies are cited in the Review of the Literature portion of this chapter. The literature is characterized by the following:

1. Assessment of teachers was not always conducted in an objective, controlled, manner. Instead, subjective evaluation by observers was frequently used as the means of assessment.

2. Teacher effectiveness, as reflected by pupil achievement, was often measured by standardized test results. But the usefulness of

standardized test results for this purpose can be questioned. The pupils being tested might very well differ from the population which was used to establish norms for the tests. In addition, skill mastery or improvement would not be indicated by standardized test results because combinations of correct answers may yield identical standardized scores. That is, a pupil might correctly mark different test items on two separate occasions, yet might correctly mark the same given number of items both times in which case the standardized scores would be identical. Thus, standardized reading tests are not designed to measure pupils' specific reading skill mastery.

3. Merit pay plans seldom have been based on measurable outcomes. Frequently, increment of a merit pay plan was determined by tenure, experience, or subjective evaluation by a superior.

4. Few research studies have been reported which were concerned with methods or effects of motivational treatments applied to teachers. Most of the motivational research related to school situations has been concerned with various treatments applied to learners, either to change social behavior or to enhance learning.

In comparison to other reported research, the main contribution of this study is that an attempt was made to combine and show relationships between teacher incentive procedures and (a) observable and measurable pupil reading skill achievement and (b) changes in the teachers' perceptions of interpersonal variables.

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Assumptions Underlying Certain Aspects of the Present Study

Six basic assumptions affected the planning and implementation of this study and provided a basis for the review of the literature.

Behavioral Objectives

A basic assumption of this study was that provisions could be made for setting specific goals to be achieved by pupils and accurately measuring the achievement of the goals. Further, it was assumed that incentives could be given to teachers based on measures of specific pupil reading achievement. Behavioral objectives could provide the necessary basis for (a) setting goals, (b) developing curriculum materials, (c) measuring achievement, and (d) providing incentives.

Eclectic Methodology

Various materials, organizational arrangements, and approaches to instruction were not considered as independent variables related to pupil achievement because no one best method has been identified. Therefore, an eclectic approach to instruction was suggested. Teachers who participated in the study had the freedom to select materials and methods appropriate for local needs.

Accountability Related to Instruction

If mastery of behavioral objectives was used to assess pupil achievement and an eclectic approach to instruction was justified, accountability related to the instructional process could be considered.

That is, if a teacher had stated instructional objectives and further, had selected appropriate materials and methods, then effectiveness could be measured in terms of the objectives achieved.

Measuring Classroom Behavior

A problem cited by many writers reporting on educational accountability is related to measurement of educational goals. In this study it was assumed that measurement should be made in terms of achievement of the stated objectives. Therefore, classroom behavior was measured in terms of teacher behavior and pupil achievement.

Informational Feedback Related to Achievement

It is possible to show that mastery of specific reading skills can be measured. It was assumed that monitoring pupil achievement and providing the teachers with informational feedback would be a motivational incentive to the teacher.

Monetary Incentives for Teachers

Finally, it was assumed that giving teachers monetary rewards on the basis of the number of reading skills mastered by pupils would provide an incentive to improve the mastery of pupil reading skills.

Review of the Literature

The literature was reviewed and is discussed in relation to the assumptions underlying this study.

Behavioral Objectives

Traditionally, schools in the United States have reflected values, goals, and objectives determined or endorsed by the local community.

The Program Task Force of New York State (1970) explicitly stated educational objectives which reflect community desires by declaring that, " . . . education exists to serve the needs of the people of the community . . . education must be developed to achieve the community's goals and values." It may be assumed that all school systems adopt some local educational objectives, as demonstrated by various criteria related to qualifications for staff teachers and requirements of students for graduation.

Behavioral objectives can be stated on different levels of specificity. Objectives can be stated as abstract, long-range, educational goals. Obviously, many of the resulting behaviors are not manifested until adulthood; thus, many objectives cannot be written in terms of being immediately measured. It was suggested by Lindquist (1955) that educational programs should include both long- and short-term objectives, because many instructional objectives cannot be fully evaluated until some time long after the given instruction has ceased. He further stressed that short-range objectives should be relevant to the pupils receiving instruction. He suggested that continuous evaluation of these short-range objectives should provide evidence that their attainment will eventually lead to the completion of reading skill mastery (long-range objectives).

It is possible to state behavioral objectives which synthesize broad educational goals into more specific goals for the purpose of developing instructional materials and assessing specific reading achievement (Krathwohl, 1965). Popham (1969) incorporated behavioral

objectives into a four-step model which he considered necessary for the development of a curriculum. The four steps were: (a) statement of, or specification of objectives, (b) preassessment of the learner's previously acquired skills or knowledge, (c) determination of a hierarchy of skills or an instructional sequence, and (d) student evaluation in terms of attainment of the previously stated instructional objectives. The need for explicit and clearly stated objectives was also emphasized by Wittrock (1969) in the suggestion that before one reaches decisions and judgments about curriculum and instruction, the basis for such decisions and judgments needs to be made explicit through the utilization of objectives.

Mager (1962) stated that if clearly defined goals are lacking, it is impossible to effectively evaluate an educational course or program or select appropriate materials and instructional methods. He further expressed the idea that if a teacher teaches skills that cannot be evaluated, the teacher is unable to demonstrate that he is teaching anything. A rationale for clearly defined goals and a statement of skills was presented by Otto and Smith (1970):

> 1. The advantage in having a skill statement at hand, then, is that it keeps the specifics of the developmental program prominently before teachers.
>
> 2. The statement can provide a basis for checking on skill mastery and pacing instruction.
>
> 3. The statement can serve as a guide for the organization of instruction and particularly of instructional materials.
>
> 4. The skill statement, then, can provide a basis for the assessment of the skill mastery of

> individuals and for the organization of materials to be brought to bear for skill development.
>
> 5. The statement can -- if restated in language appropriate for pupils at the several levels -- serve as a guide to self-evaluation and self-directed study (pp. 41-42).

The rationale for implementing a clearly defined objective-based scope and sequence of word attack reading skills has been provided by Otto and Askov (1972), and is presented here for two reasons. First, the rationale serves as a model to demonstrate that it is indeed possible to include a clearly defined objective-based scope and sequence of skills in a reading program. Second, the Wisconsin Design for Reading Skill Development, which is further described in Chapter II, provided the necessary framework for planning, implementing, and measuring pupil reading achievement in this study.

The Wisconsin Design for Reading Skill Development has four fundamental purposes:

> 1. To identify and describe behaviorally the skills which appear to be essential for competence in reading;
>
> 2. To assess individual pupil's skill development status;
>
> 3. To manage instruction of children with different skill development needs;
>
> 4. To monitor each pupil's progress (p. 1).
>
> The charge is ultimately issued to the teachers, though, that "the teachers, not the system or the materials, do the teaching [p. 5]."

Thus, the literature supports the assumption that behavioral objectives can be stated to guide the development of (a) educational

goals, (b) specific levels of achievement, (c) curriculum materials, and (d) assessment measures. It has been demonstrated then that behavioral objectives can provide a basis for this study and that an objective-based curriculum can be used to measure pupil achievement.

Eclectic Methodology

Evidence exists in the literature which indicates that various educational materials, teaching methods and techniques, and approaches to instruction do not significantly affect pupil achievement. However, there are indications that certain teacher characteristics and learning situations may affect pupil learning. The intent in this portion of the literature review is to justify an eclectic methodology for instruction and to show that characteristics of the teacher affect pupil achievement. Various instructional materials, methods, techniques, equipment, and patterns for classroom organization are reviewed.

Studies have been conducted to examine reading achievement with various methods of instruction. In each of the following investigations no one method was found to be significantly better than any of the compared methods: (a) basal readers versus basal-supplement (Manning, 1966); (b) language experience approach versus basal reader versus basal reader with Phonovisual method versus language experience plus audiovisual procedures (Harris and Serwer, 1966); and (c) I.T.A. versus basal versus language arts approach (Hahn, 1966). In nearly all of the literature reviewed, the method of instruction did not make a significant difference in pupil achievement.

A variety of material and equipment has been investigated to determine their affect on pupil reading achievement. Lockmiller and DiNello (1970), for example, investigated the relative effectiveness of "Words in Color" versus Houghton-Mifflin's first-grade reader on retarded second grade readers' reading achievement. The investigators found no significant difference between the two programs as far as pupil achievement was concerned. Watkins (1971) tested the effectiveness of the Scott Programmed Reading Kit which consists of graded, self-correcting games and found that the one method does not work equally well for all learners or teachers. Blom, Waite, and Zimet (1968) analyzed 1,307 stories in the first-grade materials of twelve published series in terms of reading level, story theme, environmental setting of the stories, attributes of the characters, and interaction among several variables. These investigators found no significant differences in the content variables studied across reading levels, giving further evidence that various types of material do not differ significantly from each other.

Bond and Dykstra (1967) extensively surveyed studies that investigated the effectiveness of reading instruction in a variety of first-grade classrooms. Their findings indicate that no method was especially effective or ineffective for pupils of high or low readiness. Variables such as class size, teacher experience, and teacher efficiency did not significantly affect reading achievement. In fact, similar reading programs were found to vary in their effectiveness from one project to another with the suggestion that

factors other than the method influenced success. As a result, they suggested that future research might be centered on characteristics of the teacher and learning situation rather than on methods and materials.

After comparing almost one hundred current approaches to reading instruction and fifteen basal reading series, Aukerman (1971) concluded that few comparative studies provide statistical information that prove one approach to be superior to another. He suggested that the success of a reading program lies with the degree of commitment which a practitioner is willing to make. He went on to say:

> . . . The fully-committed teacher will be guided by the fundamental principle of individual differences, and will provide a wide variety of stories that are meaningful to children who have a wide variety of abilities, interests, and needs (p. 489).

These studies indicate then that some characteristics of the teacher and not just the teaching materials and methods affect pupil achievement.

Accountability Related to Instruction

The assumption underlying the study of accountability was that if (a) teaching was defined in terms of pupil mastery of stated objectives, and (b) various instructional methods, materials, and techniques did not make a significant difference in pupil achievement, then (c) it was possible to determine what teachers were responsible or accountable for in the educational process. The literature revealed varied and conflicting definitions of educational accountability.

Thomas and McKinney (1972) noted a renewed public interest in the area of educational accountability after they reviewed the related literature. The interest resulted from the public's perception that schools fail to educate pupils and to responsibly use public funds. Four main issues related to demonstrating educational accountability were identified:

1. Testing and evaluating educational results would be difficult because appropriate tests are not available to accurately measure all aspects of the educational program.

2. Accountability systems often apply extrinsic incentives to participants to stimulate the achievement of the stated educational goals. Extrinsic incentives are not always socially acceptable.

3. Collective bargaining could formalize an accountability model, but might increase pressure for teacher conformity and stifle innovation.

4. A central issue to an accountability plan is the conflict between the demand for freedom and diversity in the schools and the demand for greater assurance of results. Freedom and diversity are needed for innovation while the results of innovation are rarely predictable.

In defense of the teacher, the following problem was noted relating to accountability:

> No one has ever been able to successfully define good teaching -- there are so many techniques that can work at times for particular teachers and students but also fail at other times . . . Until better ways for monitoring the process of

> education are devised, it is not generally feasible to base accountability on evaluation of the process of teaching (p. 24).

Rogers (1969), in commenting on preferred characteristics of teachers, schools, and general education, noted that where there is an emphatic teacher, each student tends to feel liked by the other students and has a more positive attitude toward himself and school. Thus, he tends to utilize his abilities more fully toward school achievement. Neill (1960, pp. 4-5), in discussing the responsibilities of teachers in his school, stated, "We have no new methods of teaching, because we do not consider that teaching in itself matters very much. Whether a school has or has not a special method for teaching . . . is of no significance . . . the child who wants to learn . . . will learn . . . no matter how it [a subject in school] is taught."

Three implications related to educational accountability can be drawn from a report by Jenkins and Deno (1970). First, teaching effectiveness is often measured by some subjective evaluation of classroom climate. Second, when teachers can determine evidence of pupil achievement, the teachers are more satisfied with their job. Third, it is possible for an individual to pose as a teacher and not really teach.

Buchmiller (1971), in defining what was meant by educational accountability, said that it "appears to mean very different things to different people or agencies." He also suggested that, "there appears to be little consensus as to who will be held accountable for what and under what conditions."

Klein (1971) recognized that the value of a measuring tool for accountability is a function of the quality and quantity of the information it provides. In summary, he stated that:

> The major problems involve questionable test validity, poor overlap between program and test objectives, inappropriate test instructions and directions, and confusing test design and formats. In short, a VOID exists between the demands of accountability and the present stock of standardized instruments (p. 7).

Thus, there is interest in the topic of educational accountability, and many educators recognize the need for some type of accountability system. However, most writers reporting on educational accountability cited problems in identifying the portion of the educational program for which to hold teachers accountable.

Measuring Classroom Behavior

Literature related to measuring teachers' classroom behavior and to measuring pupil achievement is reviewed here.

Teaching Behavior. Numerous educational researchers and authors have attempted to define teacher effectiveness; however, a review of the literature indicates a variety of problems in measuring teacher performance. Rutherford (1970), for example, defined teacher effectiveness in terms of how the teacher acts and interacts with children on a personal basis, and how the teacher performs instructional duties; however, no exemplary model or objective base was provided for evaluating the teacher.

Ornstein (1970) reported the following problems related to measuring teacher behavior. First, much research related to teacher behavior

is noncummulative because different researchers measure different variables, use different terminology, and use different methods of measuring. Next, he pointed out difficulties related to distinguishing, controlling, and analyzing an endless number of variables about which it was difficult, if not impossible, to obtain data, i.e., variables of time, place, school morale, school goals, teacher training, teacher experience, age and sex of teachers, grade level, type of classroom, and social make-up of community. Further, he reported that there is simply no adequate criterion or list of variables against which a list of teacher behaviors can be validated or compared. He pointed out that various combinations of variables affect yet other variables in an infinite number of combinations, creating an extremely complicated labyrinth of possibilities which complicate the evaluation process. Finally, he suggested the possibility that measuring teacher behavior is beyond scientific analysis because the process of teaching might not be a natural phenomenon suitable or controllable for scientific inquiry.

Burkhart (1969) contended that evaluation of teacher performance is more easily endorsed in theory than defended through research and analysis. He suggested that teacher evaluation be in terms of pupil achievement or output and in the ability of the teacher to bring about learning. Schlock (1970) commented that society is not clear about what the products of education should be or what is appropriate teacher behavior that relates to the desired outcomes.

The examination of the literature, then, did not reveal (a) a model of teacher behavior to be followed, or (b) a method of equating pupil achievement to teacher behavior.

Pupil Achievement. Very definite and specific methods of measuring pupil achievement were suggested. Specifically, measuring pupil achievement in particular reading skills was recommended.

Harris (1970) suggested that the evaluation of a reading program include measures of more than one component in terms of meeting stated objectives.

> The evaluation of reading involves considerably more than the collection of scores on reading tests. Evaluation means arriving at judgments about the degree to which objectives of the reading program are being achieved. Evaluation can make use of data from many sources: standardized tests, observation of pupil performance during reading lessons, workbook exercises, evidence of reading interests derived from discussion periods or written compositions, . . . etc. The data used in evaluation do not have to be quantitatively exact. The important thing is to have some usable evidence concerning the degree to which each important objective is being reached (p. 138).

Mager (1962) was more specific in his recommendations for assessing reading achievement. He suggested that before achievement is monitored, certain criteria need to be established.

> If you can specify at least the minimum acceptable performance for each objective, you will have a performance standard against which to test your instructional programs; you will have a means for determining whether your programs are successful in achieving your instructional intent . . . indicate in your statement of objectives what the acceptable performance will be, by adding words that describe the criterion of success (p. 44).

In discussing reading instruction, Farr (1969) suggested that reading achievement is the most important goal of the reading program. Further, he suggested that other variables such as teaching procedures, grouping practices, curriculum structure, and teacher capabilities be measured in terms of pupil growth in reading achievement. He made the following statement regarding the assessment of a reading program.

> Student growth in reading skills is the single most important goal of the reading program. Probably the most valuable contribution which measuring devices can make to reading instruction is that of providing a reliable and valid assessment of this growth. The need for such assessment cannot be over-emphasized: most of the elements within the reading program -- the teaching procedures, the grouping practices, the curriculum structure, and even teacher capabilities -- are evaluated on the basis of student growth. While it is not proposed that student growth be the sole basis for evaluating the reading program, nonetheless, it is the single most important variable to consider in assessing reading programs (p. 134).

Tyler (1933) emphasized the point that the main reason for testing is to determine the results of the instructional process. Testing should concentrate on the material presented during the instructional program and should measure the degree to which the program objectives are being attained. Engman (1968) suggested that teachers need to develop learning experiences related to specific course objectives and that these objectives be prerequisite for valid assessment. Consalvo (1969) and McAshan (1970) emphasized the idea that learners can demonstrate mastery only if the test items measure mastery of a particular objective.

The evidence reported did show that the degree of pupil skill mastery could be used to assess an educational program. More

specifically, criterion-referenced tests should be the basis for the assessment of specific reading skills to measure both (a) pupils' reading achievement and (b) teachers' teaching capabilities. Also, it was noted that teacher behavior was not equated to pupil achievement.

Informational Feedback

The literature review thus far has (a) established the use of behavioral objectives as a curriculum base, (b) justified an eclectic methodology of instruction, and (c) determined that reading achievement could be evaluated, assessed and measured. Because degree of achievement can be measured, it is possible to determine whether various motivational treatments affect pupil achievement. Further studies were reviewed to determine whether informational feedback is considered to be a motivational technique.

Cofer and Appley (1964), in reviewing various motivational theories, suggested that possibly some kinds of learning do not involve reinforcement, " . . . and that motivational control in such cases resides in characteristics of incentives [pp. 503-504]." Incentives may influence not the learning but the performance of responses. Specifically, it was stated that " . . . incentives and reward affect the performance of what has been learned but not the learning process itself [p. 506]." Knowledge of results is a phrase which refers to procedures by which a subject is informed of either the quality or the quantity of his performance (p. 770). Apparently, knowledge of results is a factor commonly thought to have motivational characteristics.

Thus, according to Cofer and Appley, informational feedback is considered to be a motivational technique because it acts as an incentive, and further, that if the incentive is associated with the act-reward sequence, it can cause an individual to repeat a past performance. Associated with a teacher-pupil situation, it might be inferred that if a teacher was rewarded for improving a pupil's reading achievement, then the teacher might further be expected to repeat the teaching performance.

Because of the scarcity of research related to presenting teachers with informational feedback in terms of pupils' objective-based skill achievement, this review of literature includes samples of (a) supervisory conferences and (b) inservice instruction used in schools.

The supervisory conference has been a traditional way of furnishing teachers with informational feedback regarding the instructional process and resulting pupil achievement. One of the first published reports of a formal conference (Norton, 1926) cited an account of a principal in 1839 who visited a particular classroom as an active listener and observer. Subsequent remarks to the teacher indicated what the principal considered good and what he considered faulty; however, no criteria were furnished defining "good" or "faulty."

Michalak (1968) also reported that a close examination of the literature revealed that while most authors emphasize the importance of a conference situation in which the supervisory personnel furnish

the teacher with informational feedback and offer suggestions, they do not have a research base for their suggestions.

Kosier and Severson (1971) reported that " . . . most teacher training procedures have employed some form of feedback in their inservice programs [p. 2]." They hypothesized that " . . . although inservice alone may produce weak efforts compared to traditional change procedures, inservice should have some positive effect on teachers [p. 2]." In reporting their findings, they concluded that their hypothesis was incorrect, and that inservices alone had little effect on teacher performance. They reported that many teachers sought to avoid supervisory personnel and that instructions to teachers were most effective if they could be implemented by the unsupervised teacher:

> Inservice training alone may have relatively little effect, but if this is so, it shows the way to increase the benefit from inservice training. Since teacher autonomy is commonly viewed as quite strong, if instructions are offered in such a way that effective self-implementation is viewed as keeping additional attention and consultation away from their classroom, teachers might work hard to achieve improvements themselves (p. 8).

Rogers and Stevens (1972) suggested that if individuals are furnished with information regarding their performance on a given task, they will make changes in their behavior in an attempt at self improvement. They stated:

> . . . If a chosen course of action is not self-enhancing this will be sensed and he [the individual] can make an adjustment or revision. He thrives on a maximum feedback interchange, and thus, can continually correct his course (p. 16).

Buchanan, Quilling, and Graper (1971) indicated that measures of pupil achievement derived from measures of criterion-referenced reading assessments can provide accurate informational feedback to teachers. Such information can function both as (a) an evaluation of the reading program, and (b) an assessment of the individual pupil's reading achievement. Further, they reported that:

> The administrator who monitors instruction should have sufficient information to report reading progress of pupils in meaningful terms to the community as well as measure the effectiveness of reading instruction in his school. In serving the administrator as well as the instructor curriculum-embedded tests will then yield information which functions in program evaluation as well as individual assessment (p. 7).

Thus, the literature shows that supervisory personnel have lacked a research base on which to offer feedback, that teachers seek to avoid supervisory personnel, and that inservice alone has little effect on teacher performance. However, there are also indications that individuals attempt to improve their performance when furnished with informational feedback, and that criterion-referenced assessment can provide a basis for feedback regarding pupil achievement.

Monetary Incentives Related to Achievement

Monetary incentives have been used for many years in various attempts to increase or improve the performance of individuals. In the field of education, for example, various plans, programs, systems, and theories have been used with some type of monetary incentive to teachers. Historically, many were based on subjective judgments and criteria not related to pupil achievement. The present portion of the

review is concerned with determining relationships between monetary incentives and human performance. References are made to educational plans and programs and empirically based observations as they relate to monetary incentives given to teachers.

Numerous studies conducted in industrial situations on the effects of money as an incentive for workers' performance report that the effectiveness of a piece-rate incentive system depends on certain aspects of the particular production quota employed (Mathewson, 1931; Roethlisberger and Dickson, 1939; Whyte, 1955). Locke (1968, p. 175) reported that when the workers were of the opinion that their "long-term self interest (either in terms of interpersonal relations, effort, or job tenure) was threatened by trying to go 'all out' for piece-rate earnings," they tend to hold production rates to what they considered a "safe" level. This same principle might be applied to teachers. That is, if teachers were of the opinion that their self-interest (interpersonal relations or job tenure) was threatened by trying to go "all out" for piece-rate (reading skill acquisition) earnings, they might tend to hold teaching services to a safe level.

Research has provided information to show that money incentives act to (a) encourage the acceptance of a task, or (b) help to set a goal which an individual might not establish on his own. Locke (1968) stated that:

> One effect of a well-run incentive system is that it [providing the workers value money] will encourage workers to accept tasks and set goals that they would not accept or set on their own (i.e., for the intrinsic enjoyment of the work

> itself). Thus, money can serve to commit subjects to tasks which they would not otherwise undertake (p. 175). . . . the most important role played by money is probably to get a subject to accept an assigned task or goal or to insure his commitment to a job (p. 185).

Again, if this principle can be applied to teachers, it would further be expected that money incentives would encourage teachers to set goals of achievement that they might not do on their own.

The concept of providing monetary incentives to teachers is not new. Various systems have been implemented in schools since before the turn of this century. Eaglesham (1967) reported a plan used in selected elementary schools between 1870-1890 whereby schools were paid extra money on the basis of the number of students that successfully completed certain state-administered examinations. The discreditation of the system was attributed to payments being based on absolute levels of performance rather than on increments in performance.

As reported earlier in this chapter, teacher evaluation has been based on subjective measures of classroom behavior and personality characteristics. Teacher ratings were related to teaching techniques, classroom organization, and other school activities, i.e., the teaching process. Reports have been cited indicating that such subjective evaluations of teachers are inaccurate because objective criteria are not used as measures and different variables affect individual evaluations in various ways. The validity and reliability of subjective ratings of teachers by principals were investigated by Worth (1961). He reported the following:

> Each administrator made an independent appraisal of the teacher. . . . The spread of opinion (on a seven point rating scale) was considerable, ranging from "EXCEPTIONAL: demonstrates a high level of professional skill" to "DOUBTFUL: has not demonstrated suitability for teaching."
>
> Greater administrative experience did not decrease the variation; experienced principals tended to differ in their ratings as widely as their inexperienced colleagues (pp. 2-3).

Rhodes and Kaplin (1972) reported that in an educational accountability system, teachers should be judged on the product (pupil achievement) of education at least as much as on the process (method of instruction).

> In previous times, most evaluation has focused on process -- the methods used by teachers -- rather than the outcomes gained by the students' performance as a result of the work of the teacher (p. 7).

Rhodes and Kaplin (1972) further suggested three ways of compensating teachers: (a) pay for the job done (achievement of stated objectives); (b) pay for doing the job (engaging in the process of teaching); and (c) pay for the person who does the job (based upon his qualifications or special skills or experience).

Monetary incentive plans for teachers, based on pupil achievement, have been implemented but have not always been compatible with the existing school schedule, nor have they been fully understood by the participating teachers. The authors of "A Demonstration of Incentives in Education" (1972) reported one method of providing incentives to teachers and students on a contractual basis. Teachers were given bonuses to purchase rewards for the children, to buy instructional aids, or to use in any other manner they wished. The results of the

study indicated that the incentives failed to have any effect on reading and math skill achievement. Certain limitations in the study which may have altered the reported results were: (a) the program was not negotiated with teachers until November; (b) the communication between cooperating schools and the experimenter was ineffective; (c) the testing program took place after school started and schedules were in operation; (d) the lack of lead time prohibited the training of teachers; (e) the monies for incentives were not received until the end of December making the actual starting date January; and (f) initial negative attitudes on the part of the teachers toward the program were caused by the aforementioned problems.

The literature indicates then that monetary incentives can act to encourage an individual to set higher objectives or goals. Monetary incentive systems for teachers have been planned and implemented for more than one hundred years. Reports have been cited which show that evaluation methods used as a basis for determining monetary incentives (merit pay) were based on subjective evaluations of the teaching process and not on pupil achievement, and that the evaluations were not always valid and reliable. Therefore, it appears that in order to effectively provide teachers with monetary incentives it is necessary to: (a) state specific reading skills to be mastered by pupils; (b) collect data related to pupil achievement; and (c) provide monetary incentives to teachers on the basis of pupil achievement of stated objectives.

Summary

Certain assumptions have been made which were germane to the design of the present study. Evidence has been cited which supports the assumptions which are summarized as follows:

1. Behavioral objectives can provide the necessary basis for setting goals, developing materials, measuring achievement, and providing incentives.

2. An eclectic approach to teaching might be employed. No best teaching material or method could be identified. In addition, the teacher and not just the materials are responsible for instruction.

3. Educational effectiveness can be measured in terms of objectives achieved.

4. Pupil reading skill achievement cannot be measured in terms of teacher behavior; however, it can be measured very specifically in terms of skills mastered.

5. Monitoring pupil achievement and providing teachers with informational feedback can be a motivational incentive to the teacher.

6. Payment of money to teachers, on the basis of number of reading skills mastered by pupils, can be an incentive to improve pupil reading skills.

The studies cited were not all comparable due to the existence of numerous differences and variables. Because of these differences, further investigation was warranted. No research findings were located related to the effects of providing teachers with incentive pay based on pupil achievement, measured by criterion-referenced tests.

Further, no findings were located related to changes in perceptions of certain interpersonal variables as a result of providing teachers with monetary incentives.

Hypotheses and Questions

The primary purpose of this study was to investigate the effects of three motivational treatments given to selected teachers. Two hypotheses were tested:

1. Pupils in the control group and pupils in the experimental groups will not differ significantly in reading skill mastery.

2. Teachers in the control group and teachers in the experimental groups will not change their perceptions of selected interpersonal variables.

In addition to testing the hypotheses during this study, certain specific questions were also considered:

1. Does monitoring of pupil reading skill mastery without feedback to the teacher act as a teacher incentive?

2. Does monitoring of pupil reading skill mastery and providing teachers with informational feedback affect the amount of pupil learning?

3. Does monitoring of pupil reading skill mastery and providing teachers with monetary incentives affect the amount of pupil learning?

4. Do incentives, based upon pupil achievement, affect teachers' perceptions of interpersonal variables related to the school learning climate, staff meetings, building principal, and innovation?

Several important limitations of the present study must be emphasized. No attempt was made to design an educational accountability system because many facets of the school situation not included in this study would need to be considered. Adoption or deletion of a merit pay system was not advocated. In short, interpreting or translating results into a suggested model is beyond the immediate interests of the study.

CHAPTER II

METHOD

The population from which the participating schools was drawn included schools in Connecticut, Illinois, Minnesota, and Wisconsin. Initially, forty-seven schools were invited to participate in the present study. These schools were first examined to determine if they met the following criteria which are further examined in this chapter:

1. The school had a signed contractual agreement with its state department of education coordinator designating it as a Multiunit Elementary School (MUS-E) (Klausmeier, Quilling, Sorenson, Way, and Glasrud, 1971, pp. 127-129). Further, the school had been functioning as a MUS-E school for at least one year prior to the beginning of the 1972-73 school year.

2. The school had begun implementing the Wisconsin Design for Reading Skill Development-Word Attack (WDRSD-WA) (Otto and Askov, 1972) at least one year prior to September, 1972.

3. The school had primary age pupils (six through eight year olds).

The experimental design of the study was a pretest-posttest control group design with randomization, consisting of three experimental groups each of which received a different motivational treatment (Campbell and Stanley, 1972, pp. 13-22). A multiple analysis

of variance and descriptive statistics were examined to determine if the variables (a) pupil reading achievement monitored without feedback to teachers, (b) informational feedback given to teachers, and (c) money incentives given to teachers, influenced (a) mastery of pupils' reading skills and (b) perception of teachers' interpersonal variables. Further, the effects of the three treatments were compared in one control and three experimental groups.

Subjects

The following timeline served as a guide for selecting the subjects and implementing this study:

1. April, 1972 - invite schools to participate
2. June, 1972 - identify subjects
3. August, 1972 - mail pupil tests and teacher questionnaires
4. September, 1972 - pretest the pupils and teachers
5. September, 1972 - provide incentives to teachers at scheduled
   May, 1973 - times
6. May-June, 1973 - posttest the pupils and teachers

Sixteen schools accepted the invitation to participate in the study. After the study had begun, one school faculty withdrew because of certain local school conditions. Fifteen schools, a total of 1,703 pupils and 69 staff teachers, participated until the conclusion of the study. (See Appendix A for additional information regarding size of staff and pupil enrollment of each school.)

Pupil enrollment in the schools ranged from 60 to 726 with city populations ranging from 490 to 310,004. (See Appendix B for additional demographic information.)

The subjects who participated in this study were selected in the following manner:

1. The letters which invited schools to participate in the study were sent in April, 1972, and included (a) a summary of the purpose of the study, (b) a projected time line for implementing the study, (c) a statement outlining the motivational treatments of the study, and (d) a statement encouraging the school personnel to request further information about the study, if desired.

2. By the end of June, 1972, all replies were acknowledged and more detailed information and directions were sent to the schools that agreed to participate.

3. The principal of each participating school was asked to select an Instruction and Research Unit (I & R unit) made up of six to eight year old children. (An Instruction and Research unit will be discussed in this chapter.) The staff teachers and pupils in the selected I & R unit were considered to be the subjects. Each principal then informed the investigator of the number of teachers and pupils in the selected unit so that the appropriate number of teacher materials and pupil achievement tests could be provided.

All correspondence with the school staffs was handled via the telephone and the United States mail. No on site visits were made to any of the schools by the investigator during the study.

Multiunit School-Elementary

The Multiunit School-Elementary (MUS-E) provides an administrative model and an organization for instruction. This administrative

organizational structure is designed to provide for (a) educational and instructional decision making at appropriate levels and (b) accountability by education personnel at various levels (Klausmeier, et al., p. 17). Because all participating schools were functioning under the multiunit organizational plan, they utilized certain aspects of the plan which were necessary for the completion of this study.

Instructional and Research Unit

In an MUS-E the nongraded instruction and research (I & R) unit replaces the age-graded, self-contained classroom. In a typical unit, there are 100-150 children with a two to four year age span. The unit staff includes a unit leader, three or four staff teachers, and one or more aides. "The main function of each unit is to plan, carry out, and evaluate, as a hierarchial team, instructional programs for the children of the unit" (p. 20).

Instructional Improvement Committee

The principal and all unit leaders form an Instructional Improvement Committee (IIC) which defines instructional objectives for the entire school. The IIC meets at least once a week to consider schoolwide policies and problems.

Thus, a multiunit school is characterized by shared decision making at two levels, the I & R unit and the IIC. As a result, roles of staff members are altered. Three key roles are summarized as follows:

Principal. The role of the principal changes in the mulitunit school to the extent that he assumes greater and more direct administrative

responsibility for developing improved educational practices, managing the preservice and inservice teacher education activities in his building, and administering research and development activities. However, in some areas the unit leaders and the staff teachers are expected to have more knowledge than the principal; therefore, decisions are made collectively through the IIC (p. 34).

Unit Leader. The unit leader chairs unit meetings. He plans and coordinates the efficient utilization of materials and resources, performs liaison functions between the unit, staff, and the principal, and helps provide inservice training for unit members. His role is not supervisory (p. 23).

Staff Teacher. The staff teacher participates in unit planning sessions and works with a large number of children in the unit (p. 23). In contrast, the teacher in a self-contained classroom works independently with a smaller number of children (pp. 41-42).

Instructional Programing Model

A systematic plan, called the Instructional Programing Model (IPM), is used by teachers in multiunit schools to provide instruction to pupils. The IPM is designed to provide for differences among students in their rates and styles of learning, levels of motivation and other characteristics, and also to take into account all the educational objectives of the school. The IPM consists of six steps:

1. State the educational objectives to be attained by the student population of the building after a time period of a year or longer;

2. Estimate the range of objectives that may be attained for subgroups of the student population;

3. Assess the level of achievement of each student by the use of criterion-referenced tests, teacher observation, and work samples;

4. Set specific instructional objectives for each child to attain over a short period of time;

5. Plan and implement an instructional program for each student;

6. Assess students for attainment of initial objectives and for setting the next set of instructional objectives (p. 19).

For the purpose of implementing this study, the MUS-E provided (a) a hierarchial team, the I & R unit, to carry out the instructional program; (b) a decision making group, the IIC, to set schoolwide objectives; and (c) a model of instruction, the IPM, for the individual student.

Wisconsin Design for Reading Skill Development Measuring Pupil Achievement

In addition to operating under the multiunit plan, the school staffs which participated in this study were implementing the Wisconsin Design for Reading Skill Development (WDRSD). Designed for individualizing instruction, the WDRSD is compatable with the IPM. As stated in Chapter I, the WDRSD has four fundamental purposes:

1. To identify and describe behaviorally the skills which appear to be essential for competence in reading;

2. To assess individual pupil's skill development status;

3. To manage instruction of children with different skill development needs; and

4. To monitor each pupil's progress (Otto and Askov, 1972, p. 1).

The WDRSD provides a list of word attack and structural analysis skills considered essential for decoding words. Behavioral objectives for each skill are stated in order to define pupils' reading skill mastery. Also provided is an assessment component, the Wisconsin Tests for Reading Skill Development-Word Attack (WTRSD-WA) (Kamm, Miles, Van Blaricom, Harris, and Stewart, 1972). (See Appendix C for a list of the skills and objectives, and a description of the tests used in this study.)

In order to accurately monitor children's mastery of objectives and to assist teachers in placing pupils in appropriate instructional groups or activities, the WDRSD includes suggested management procedures. The management procedures were important to this study because the monitoring of pupil skill mastery was the basis for providing teachers with incentives.

WTRSD Characteristics

The WTRSD were the means for monitoring pupil progress. They provide criterion-referenced pretests and posttests for assessing pupil reading skill mastery. Characteristics of the WTRSD which were important to this study were:

1. Each test is keyed to a specific objective; therefore, each test is an independent unit.

2. Time limits are not imposed and examiners are encouraged to respond to pupils' queries regarding directions and unknown words in the tests. The tests focus on pupils' performance of the task at hand,

and not on their ability to accept task constraints or their willingness to respond at a certain pace.

3. Responses to most of the tests are machine-scorable.

4. Each test is appropriate for individual as well as group administration. The tests can and should be used with individuals any time formal assessment of a given skill seems desirable (pp. 20-21).

Thus, the WTRSD made it possible to identify individual pupil's reading skill strengths and weaknesses and to focus teaching/learning activities (pp. 3-4).

Assumptions for WDRSD Implementation

Several assumptions serve as guidelines for any school personnel implementing the WDRSD (pp. 4-5). For purposes of this study it was assumed that each participating school followed the guidelines which are summarized below.

Prototypes. The components of the WDRSD are intended to serve as prototypes for developing a reading program which meets local needs and expectations. Every component should be closely examined, adopted when feasible, and then adapted, extended, or rejected as local needs become apparent.

A Framework for Skill Development. The WDRSD provides a skill development framework for an elementary school reading program. It is not a total program or a self-contained system for teaching reading skills.

Eclectic Methodology. No best method for teaching reading has been discovered, nor is such a discovery expected in the foreseeable

future. Therefore, methods and materials are best selected by teachers who are well acquainted with their pupils as well as with a wide variety of approaches. The WDRSD offers a means of organizing materials and procedures to permit efficient retrieval; it provides for an eclectic approach to instruction.

Flexible Grouping and Pacing. A continuous progress approach to grouping pupils and to pacing instruction is assumed. That is, pupils' specific skill development needs rather than their grade placement or general achievement level guide instructional practices in implementing the WDRSD.

Teacher Direction of Instruction. Teachers who know their pupils are in the best possible position to guide instruction. Materials, activities, and procedures are keyed to the outline of skills and are presented as resources which the teacher may use in planning his instructional approach. The assumption is that teachers ought to do the teaching.

Testing Strategies to Measure Pupils' Reading Skill Mastery

The reading skill achievement of all pupils was measured before teachers were notified of their assignment to a treatment group. This procedure was an attempt to negate possible effects on the teachers resulting from knowledge of placement in a given treatment group. The pretest enabled teachers to determine the instructional needs of each pupil participating in the study and provided baseline data for the investigator. The following procedures then were used for gathering data:

1. All pupils were given both Levels B and C of the machine-scorable WTRSD.

2. Tests were administered by the pupils' regular teacher, as specified in the WTRSD-WA Test Administrator's Manuals (Miles, Kamm, and Stewart, 1972).

3. Because of the wide range of difficulty between the Level B and Level C tests, teachers were instructed to encourage pupils to complete as many tests and test items as possible. If a pupil became frustrated because some tests were too difficult, the testing ceased. (See Appendix D for complete directions.)

Following the pretesting the pupils received reading instruction for word attack skills based on the previously summarized assumptions for WDRSD implementation.

Instructions for administering the posttest were the same as those for the pretest. The posttest was administered to all pupils within one week after the conclusion of the seventh skill instruction period. It was suggested that a skill instruction period last for two to three weeks (p. 84). (See Appendix E for the suggested testing sequence.) All tests administered as pretest and posttest measures were optically scanned and computer scored by Interpretive Scoring Systems, a division of National Computer Systems, Inc., Minneapolis, Minnesota. Pretest and posttest mastery scores for individual pupils were returned to each respective school.

Standardized, norm-referenced reading scores were not obtained for the pupil population because the purpose of the study was to measure mastery of specific reading skills.

Measure of Teachers' Perceptions of Interpersonal Variables

Several selected sections of an instrument designed by the Cooperative Project in Educational Development were used to measure the teachers' perceptions of four areas of interpersonal variables (Hilfiker, 1971, pp. 43-58). More specifically interpersonal variables were identified to measure: (a) the teachers' perceptions of colleagues in terms of adaptiveness, openness, and trust; (b) the building principal's role in terms of professional leadership and social support; (c) I & R unit meetings with regard to each teacher's feeling of openness and powerlessness, the group's problem-solving adequacy; and (c) innovativeness in relation to sources of, and reasons for, innovation. The reliabilities to show the internal consistency of the total scale and the subscales were not reported. The particular interpersonal variables selected and evaluated by the teacher quesionnaire were chosen for two reasons (see Appendix F). First, this study was undertaken in order to measure the effect of three motivational treatments on MUS-E staff teachers' perceptions of certain interpersonal variables. Second, there was a relationship between the perceptions measured and certain provisions and objectives of the MUS-E discussed above.

The perceptions of staff interpersonal variables were measured on a prequestionnaire at the beginning of the study, and on a postquestionnaire at the conclusion of the study. Instructions were given to each school staff to: (a) complete the prequestionnaire no later than one week after the pupils had completed the pretests of reading skill achievement; and (b) complete the postquestionnaire no later than one week after the pupils had completed the posttests of reading skill

achievement. Further, the investigator suggested that the questionnaires be completed by all teachers simultaneously as part of a regular scheduled I & R unit meeting. Completed questionnaires were received from all but two school staffs.

Definition of Terms

The interpersonal variables which were measured in this study may be subject to various interpretations and definitions. For purposes of this study, they are defined as follows:

Faculty Meeting -- I & R unit meetings of the professional personnel at the school building level.

Problem-Solving Adequacy -- The degree to which meetings are characterized by clarity and control of the agenda, the diagnosis and definition of problems, the generation and discussion of possible solutions, the resolution of problems through decision making, and the implementation and evaluation of action steps.

School System Climate -- An environmental quality described by prevailing temper, outlook, attitudes, or norms as collectively generated by members of the school system.

School System Innovativeness -- The degree to which a school system undertakes deliberate, novel, or specific changes which are thought to be efficacious in accomplishing the goals of the system. Innovations are willed and planned rather than occurring haphazardly.

Executive Professional Leadership (EPL) -- The degree to which teachers perceive the principal as stressing his obligation to improve the quality of staff performance.

Social Support -- The degree to which teachers perceive the principal as a warm, socially responsive, individual who tends to create an emphatic and non-threatening environment.

Powerlessness -- A quality or state of being devoid of strength, authority, or resources to act or influence others . . . uninfluential, as opposed to controlling, and self-directed.

Openness -- A quality or state of being characterized by ready accessibility, cooperative attitudes, tolerance of internal change, and permissiveness of diversity in social situations . . . unconstraining, accepting, tolerant, nonthreatening, and honest, as opposed to confining, concealing, and restricting.

Trust -- The degree to which an individual perceives interpersonal relationships as characterized by an assured reliance or confident dependence upon the character, ability, or truthfulness of others . . . credence, confidence, safety, and security as opposed to suspicion, skepticism, and disbelief.

Adaptiveness -- The degree to which an individual perceives interpersonal relationships as characterized by a ready capability for modification or change in social conditions, ways or environments . . . flexible, changeable, adjustable, pliable, and resilient, as opposed to rigid, conforming, inflexible and undeviating (p. 5).

It should be understood that in spite of the preceding definitons, interpretations of the terms are subjective. The definitions, therefore, could have varied from teacher to teacher.

An attempt was made to gain the confidence of the teachers so they would express their real perceptions. Teachers were directed not to identify themselves or the name of their school. Further efforts were made to keep the questionnaires anonymous by providing each school with a self-addressed, postage paid envelope which was used to return the completed questionnaires to the investigator. The questionnaires were color-coded to identify the treatment group.

Treatments

The following procedure was used to randomly assign schools to a treatment group:

1. The schools' names were listed in alphabetical order, according to the state in which they were located. The states were also listed in alphabetical order.

2. A list of random numbers was used to assign each school a number, from one to four, to correspond with one of the four treatment groups. Each of the numbers was assigned to only four of the original sixteen schools so that there would be an equal number of schools in each of the four treatment groups.

3. Treatment groups were then listed in the following order: (a) control, (b) monitor, (c) feedback, and (d) monetary. A different list of random numbers was then used to assign a number, from one to four, to each treatment group.

4. The number assigned to each school then was matched with a corresponding number that had been assigned to a treatment group. (See Appendix A for the treatment group randomly assigned to each school and the key to the random assignment.)

After administering the pupil pretests and completing the teacher questionnaires, each school staff was informed of its assingment to a randomly selected treatment group. Thus, all teachers in the control and experimental groups were given identical directions for testing pupil reading achievement and completing teacher questionnaires before they were assigned to one of the treatment groups described below.

Control Group. Schools in the control group were included in this study to represent, in theory, free choice in the implementation of the the WDRSD in accordance with decisions made in the local school. Thus,

consideration was given to schools not restricted by limitations or treatments of the present study. After staff reading teachers in the control group (C) completed the prequestionnaire and administered the WTRSD-WA to the pupils, they had no further scheduled contact with the investigator until directions for posttesting were given.

Monitoring Pupil Achievement. In the monitoring group (E1) staff reading teachers administered the WTRSD-WA to the pupils and the pupil achievement was monitored by the investigator. The teachers received no further incentives. Single WTRSD-WA paper and pencil tests designed to measure specific skill mastery were given at the end of each instructional period. The tests were corrected and scored by local MUS-E personnel. The scored tests were then submitted to the principal, who forwarded a summary of pupil reading skill mastery to the experimenter. (See Appendix G for the Record of Word Attack Mastery.)

Informational Feedback. Staff reading teachers in the informational feedback group (E2) followed the same testing procedures as teachers in F1. However, after the principal submitted a summary of pupil skill mastery to the investigator, teachers were given informational feedback and positive social incentives in the form of letters from the investigator summarizing the number of skills mastered by children in the particular I & R unit along with positive statements of praise. Each principal and staff in E2 received similar letters from the investigator, but with test data information related only to their respective school. The letters were addressed to each participating teacher and distributed by the building principal. Thus, the incentives were handled

by the principal so that he was provided with objective-based informational feedback which could serve as the basis for a principal-teacher conference.

Monetary Incentives. Staff teachers in the monetary incentive group (E3) also followed the same testing procedures as teachers in E1 and E2. However, the summary of pupil reading skill mastery submitted by the principal was used by the investigator as the basis for providing monetary incentives to staff teachers. The amount of money paid to teachers as an incentive was directly related to the reported number of reading skills mastered by the pupils in each unit. The following procedure was used to pay the teachers:

1. The total number of skills mastered by pupils in the unit was multiplied by seventy-five cents. (The base amount of seventy-five cents was determined arbitrarily by the investigator.)

2. The total amount of money to be paid to teachers in each unit was then divided equally by the number of teachers in the unit. (The total was divided equally among the teachers to compensate for (a) various changes in grouping patterns, (b) differences in pupils' rate and style of learning, and (c) other individual pupil differences.)

3. The checks were then mailed directly to each participating staff teacher. (There were no restrictions made on how the teachers were to use the money. The money was for their own personal use.)

4. Multiple copies of statements were mailed to each principal summarizing (a) the number of skills mastered by children in the particular I & R unit, and (b) the amount of money paid to each teacher. (See

Appendix H for a copy of the statements.) The statements were distributed to the teachers by the principal. They were sent to the principals to provide them with (a) informational feedback related to pupil achievement, and (b) objective data which could serve as the basis for a principal-teacher conference.

The above procedure was repeated for each of the seven skill instruction periods. The social security numbers of teachers assigned to E3 were also obtained for the purpose of making payments and filing income tax information with the Internal Revenue Service. The amount of single incentive payments ranged from $2.25 through $16.35. Total amounts paid to each school ranged from $176.50 through $485.25. (See Appendix I for a summary of the amounts of money paid to teachers.)

Analysis

Upon completion of the pretesting and the posttesting, all tests and questionnaires were delivered to the investigator.

The Wisconsin Tests of Reading Skill Development: Word Attack, Form P, Levels B and C, were examined by the investigator to insure that test data were credited to the proper school. Then the tests were forwarded to Interpretive Scoring Systems in Minneapolis, Minnesota, where they were optically scanned and machine scored. A computer printout which showed each child's reading skill mastery was then mailed to each of the respective schools. Further, the pupil pretest and posttest data were copied via computer and verified for accuracy. The duplicate data were sent to the University of Wisconsin Research and Development Center (R & D Center).

The raw questionnaire data were recorded on standardized coding sheets. The coding was done by two full-time R & D Center employees. Coded questionnaire data were key punched by qualified, full-time R & D Center key punchers.

The computer program was written by a computer programmer employed by the R & D Center.[1] A multiple analysis of variance program, test statistics, and descriptive statistics were used to analyze the data. The data were analyzed to determine if the three variables, (a) monitoring, (b) feedback, and (c) monetary incentive, had a significant effect on (a) pupil reading skill mastery, and (b) teacher perceptions of interpersonal variables. The level of significance for testing the effects was established as $p<.05$.

[1]Edward Haertel, computer programmer, University of Wisconsin Research and Development Center for Cognitive Learning.

CHAPTER III

RESULTS AND DISCUSSION

As explained in the preceding chapter, two dependent variables, (a) pupil reading skill mastery and (b) teacher perceptions of interpersonal variables, were measured and analyzed to determine if they were affected by the three independent variables, (a) pupil reading achievement monitored without feedback to teachers, (b) social incentives given to teachers, and (c) monetary incentives given to teachers. In this chapter the differences in the pretest and posttest measures are examined and the results are presented in terms of the numbers of reading skills mastered by pupils and the significance of mean score changes in interpersonal variables perceived by teachers. Differences in reading skill mastery between treatment groups are also compared.

The main purpose of this chapter is to present and discuss data related to the effects of three motivational treatments measured by pupil reading skill mastery and staff teachers' perceptions of interpersonal variables. Further, the data presented and the discussion following are for the purpose of testing the two hypotheses and responding to the four guide questions raised in the first chapter. Conclusions derived from these data are given in the following chapter.

It is emphasized here that this study dealt with a limited sample of a specific population. Further, no attempt was made to design an educational accountability system, nor was the adoption or deletion of

a merit pay system advocated. Therefore, the interpretation or translation of the results into a suggested model is beyond the immediate interests of this study.

Results and Discussion of Wisconsin Tests of Reading Skill Development Measure of Pupil Reading Skill Mastery

This discussion is presented as a guide to evaluate the data and is used to test the first hypothesis: Pupils in the control group and pupils in the experimental groups will not differ significantly in reading skill mastery. Three questions were used to direct the testing of the hypothesis. The questions were:

1. Does monitoring of pupil reading skill mastery without feedback to the teacher act as a teacher incentive?

2. Does monitoring of pupil reading skill mastery and providing teachers with informational feedback affect the amount of pupil learning?

3. Does monitoring of pupil reading skill mastery and providing teachers with monetary incentives affect the amount of pupil learning?

The answers to these questions were formulated from data derived from this study.

The scores from the WTRSD were computed and analyzed to measure changes in pupils' reading skill mastery. First, the percentage of pupils who mastered each reading skill was computed by treatment group for the pre- and posttest.

Percentages of pupils who mastered each skill on the pre- and posttest by treatment group are presented in Table 1. For example, in the control group 47.69 percent of the pupils mastered the consonant

blends skill on the pretest, and 82.82 percent mastered it on the posttest. In the feedback group the percentage of pupils who mastered the short vowels skills was 32.88 on the pretest and 80.95 on the posttest. (See Table 1 for a summary of the percentage of pupils who mastered each skill.) Baseline data to illustrate that a wide range existed between treatment groups in the percentage of pupils mastering specific reading skills is presented.

The percentage of pupils mastering each skill was ranked by group from highest to lowest for the pre- and posttest. Then the number of times each treatment group ranked highest, second highest, third highest, and lowest was determined. The monetary group ranked highest on twenty-six skills on the pretest. The monetary group also ranked highest on fourteen skills on the posttest. On both the pre- and posttest, the control group had the lowest percentage of pupils mastering a skill in twenty-one instances. (See Table 2 for the rank order summary by percentage of pupils mastering each skill on the pre- and posttest.)

In spite of the process of randomizing the subjects and the treatments as described previously, Table 2 reveals that on the pretest the monetary treatment group had the highest percentage of pupils mastering skills on all but one of the skills. Further, examination of Table 2 illustrates that on the pretest the control group had the lowest percentage of pupils mastering skills on all but six of the twenty-seven skills.

Next, the difference in the percentages of pupils who mastered each skill on the pre- and posttest was determined by treatment group.

TABLE 1

PERCENT OF PUPILS BY TREATMENT GROUP ACHIEVING MASTERY ON SPECIFIC WTRSD

Dependent Variables	Control Group		Monitor Group		Feedback Group		Monetary Group	
	Pretest (N=325)	Posttest (N=326)	Pretest (N=450)	Posttest (N=465)	Pretest (N=292)	Posttest (N=294)	Pretest (N=342)	Posttest (N=355)
	M	M	M	M	M	M	M	M
Beginning Consonants	65.85	88.65	67.11	91.83	69.52	95.58	75.44	94.08
Ending Consonants	49.54	77.30	56.22	89.68	52.05	87.75	66.08	89.86
Consonant Blends	47.69	82.82	54.44	85.59	57.88	87.75	68.13	91.56
Rhyming Elements	38.46	75.46	43.78	69.25	45.55	82.65	55.85	84.23
Short Vowels	30.77	63.19	43.33	77.85	32.88	80.95	47.08	72.39
Consonant Digraphs	36.92	74.23	44.22	84.73	40.41	77.89	57.31	80.28
Compound Words	47.69	72.08	44.22	70.97	50.34	77.89	60.82	84.22
Contractions	17.85	53.68	25.11	48.39	29.45	65.31	33.04	72.11
Base Words	30.77	57.05	27.33	56.99	28.77	71.43	35.38	76.90
Plurals	59.08	83.74	51.56	79.14	56.16	89.11	72.51	85.91
Possessives	47.69	78.22	52.22	78.71	52.74	82.65	67.54	89.58
Consonant Variants	4.92	27.69	11.53	33.76	6.51	37.07	16.49	45.90
Consonant Blends	54.15	78.46	49.22	90.11	46.05	89.45	64.26	89.77
Long Vowels	24.00	55.08	40.13	77.42	35.35	85.03	37.46	71.93
Vowels + r, a + l, a + w	11.38	51.38	23.06	55.05	16.74	63.26	32.30	60.82
Diphthongs	19.69	56.61	31.04	61.72	21.39	74.49	34.70	65.50
Long & Short oo	15.69	44.92	22.62	51.83	14.89	55.44	32.65	54.39

-CONTINUED-

TABLE 1 (Continued)

PERCENT OF PUPILS BY TREATMENT GROUP ACHIEVING MASTERY ON SPECIFIC WTRSD

Dependent Variables	Control Group		Monitor Group		Feedback Group		Monetary Group	
	Pretest (N=325)	Posttest (N=326)	Pretest (N=450)	Posttest (N=465)	Pretest (N=292)	Posttest (N=294)	Pretest (N=342)	Posttest (N=355)
	M	M	M	M	M	M	M	M
Middle Vowel	19.38	48.00	30.82	67.10	18.14	56.12	33.33	64.33
Two Vowels Separated	12.00	47.07	28.60	63.01	12.56	61.56	31.27	58.19
Two Vowels Together	14.46	47.69	30.60	60.43	17.67	54.76	34.71	61.11
Final Vowel	10.46	36.00	17.74	35.70	11.63	53.74	23.37	49.12
Consonant Digraphs	18.77	67.07	38.58	78.92	32.56	76.87	46.40	73.10
Base Words	9.85	47.08	25.94	50.75	20.93	59.18	36.77	66.37
Plurals	12.92	49.54	27.94	57.63	23.25	64.28	37.46	65.50
Homonyms	9.23	48.00	19.96	41.72	17.21	51.36	32.65	63.45
Synonyms, Antonyms	4.31	29.85	12.64	32.69	6.51	35.03	22.68	48.83
Multiple Meaning	10.15	43.69	22.17	46.88	17.67	55.10	34.36	61.40

TABLE 2

RANK ORDER SUMMARY BY PERCENTAGE OF PUPILS MASTERING EACH SKILL ON THE PRE- AND POSTTEST

Rank	Control Group		Monitor Group		Feedback Group		Monetary Group	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Highest	0	0	1	5	0	8	26	14
Second Highest	3	0	17	4	6	14	1	9
Third Highest	3	5	6	12	18	5	0	4
Lowest	21	21	3	6	3	0	0	0

The pupil was used as the unit of analysis. Each of the treatment groups gained in the percentage of pupils mastering each of the skills. The range of improvement in the control group was from 22.77 percent on consonant variants to 48.30 percent on consonant digraphs. The range of improvement in the monetary group was from 13.40 percent on plurals to 41.52 percent on base words. The greatest improvement by any group on a given skill was 49.00 percent for the feedback group on the two vowels separated skill.

When the percentage of differences is compared between groups for the homonyms skill, it is clear that the control group had the greatest difference, 38.77 percent, and the monitor group had the lowest difference, 21.76 percent. (See Table 3 for the difference in percentage of pupils mastering pre- and posttest by treatment group.)

After examining the differences in the percentage of pupils mastering pre- and posttests by treatment group (see Table 3), one point should be emphasized. All of the differences were positive. Thus, in all of the treatment groups and on all of the measures the percentage of pupils mastering skills was higher on the posttest than on the pretest. Obviously then, as a result of being given instruction for specific reading skills, children mastered the skills.

A summary of the rank order of differences in percentages of pupils mastering a skill by treatment group is illustrated in Table 4. The difference in the percentages of pupils mastering each skill was ranked from highest to lowest. The number of times each treatment group ranked highest, second highest, third highest, and lowest was

TABLE 3

DIFFERENCE IN PERCENTAGE OF PUPILS MASTERING
PRE- AND POSTTESTS BY TREATMENT GROUP

Dependent Variable	Control Group	Monitor Group	Feedback Group	Monetary Group
Beginning Consonants	22.80	24.72	26.06	18.64
Ending Consonants	27.76	33.46	35.75	23.78
Consonant Blends	35.14	31.15	29.87	23.43
Rhyming Elements	36.90	25.47	37.10	28.38
Short Vowels	32.42	34.52	48.07	25.31
Consonant Digraphs	37.31	40.51	37.48	22.97
Compound Words	24.39	26.75	27.55	23.40
Contractions	35.83	23.28	35.86	39.07
Base Words	26.28	29.66	42.66	41.52
Plurals	24.66	27.58	32.95	13.40
Possessives	30.53	26.49	29.91	22.04
Consonant Variants	22.77	22.23	30.55	29.41
Consonant Blends	24.31	40.89	43.40	25.51
Long Vowels	31.08	37.29	49.68	34.47
Vowels + r, a + l, a + w	40.00	31.99	46.52	28.52
Diphthongs	36.92	30.68	53.10	30.80
Long & Short oo	29.23	29.21	40.55	21.74
Middle Vowel	28.62	36.28	37.98	31.00
Two Vowels Separated	35.07	34.41	49.00	26.92
Two Vowels Together	33.23	29.83	37.09	26.40
Final Vowel	25.54	17.96	42.11	25.75
Consonant Digraphs	48.30	40.34	44.31	26.70
Base Words	37.23	24.81	38.25	29.60
Plurals	36.62	29.69	41.03	28.04
Homonyms	38.77	21.76	34.15	30.80
Synonyms, Antonyms	25.54	20.05	28.52	26.15
Multiple Meaning	33.54	24.71	37.43	27.04

then determined. The feedback group ranked highest on twenty-one skills. The monetary group had the lowest percentage of change on fifteen skills. The summary in Table 4 should be compared with the summary in Table 2. The comparison reveals that:

(a) the monetary group had the greatest percentage of pupils mastering the majority of skills on both the pre- and posttest; but also had the lowest gain score on fifteen tests;

(b) the control group had the lowest percentage of pupils mastering skills on the pre- and posttest but had the highest gain score on four tests and the second highest gain score on nine tests; and

(c) the feedback group had the highest gain score on twenty-one of the tests and the second highest on five more skills.

TABLE 4

SUMMARY OF THE RANK ORDER OF DIFFERENCES IN PERCENTAGES OF PUPILS MASTERING EACH SKILL BY TREATMENT GROUP

Rank	Control	Monitor	Feedback	Monetary
Highest	4	1	21	1
Second Highest	9	10	5	1
Third Highest	10	7	1	7
Lowest	4	9	0	15

As mentioned previously, a multiple analysis of variance and descriptive statistics were examined to determine the effects of the

variables. An analysis was done to determine if the changes were significant at the $p<.05$ level between (a) the pre- and posttests, and (b) the treatment groups. The unit of analysis was the school.

A summary of the analysis of variance, which tested the significance of gain in the percentage of pupils mastering each skill is presented in Table 5. Further, the analysis was among all pupils as affected by time. The school was used as the unit of analysis. When the level of significance for each skill is examined, it is obvious that the gain in the percent of pupils mastering skills is significant at the $p<.0001$ level for all but three skills. Of these three skills the levels of significance are $p<.0004$ for beginning consonants, $p<.0003$ for consonant blends, and $p<.0002$ for final vowels. It is obvious then that the overall gain in the percent of pupils mastering all but three skills was significant at the $p<.0001$ level.

Upon examination and interpretation of Table 5, the basic assumptions which affected the planning and implementation of this study should be recalled and considered. Four of the assumptions follow:

1. Behavioral objectives can provide the basis for setting goals, developing materials, measuring achievement, and providing incentives.

2. An eclectic approach to teaching can be employed.

3. Educational effectiveness can be measured in terms of objectives achieved.

4. Pupil reading skill achievement can be measured very specifically in terms of skills mastered.

TABLE 5

SUMMARY OF ANALYSIS OF VARIANCE:
CHANGE SCORE AFFECTED BY TIME

Dependent Variable	Mean Squares	Univariate F	P<
Beginning Consonants	1596.9560	25.3604	.0004
Ending Consonants	2772.6864	35.5670	.0001
Consonant Blends	2885.5326	37.5869	.0001
Rhyming Elements	3578.7021	126.3713	.0001
Short Vowels	3845.9940	70.4913	.0001
Consonant Digraphs	3794.0150	64.3586	.0001
Compound Words	2249.5852	58.6389	.0001
Contractions	4075.5732	118.8472	.0001
Base Words	4291.3352	261.5627	.0001
Plurals	2000.9115	41.0920	.0001
Possessives	2557.0723	53.9138	.0001
Consonant Variants	2550.1818	79.1172	.0001
Consonant Blends	2759.4234	28.3460	.0003
Long Vowels	4231.5789	86.8151	.0001
Vowels + r, a + l, a + w	3982.6378	92.3584	.0001
Diphthongs	3839.4350	44.9526	.0001
Long & Short oo	2567.2704	55.2916	.0001
Middle Vowel	3392.6794	48.6198	.0001
Two Vowels Separated	4241.9635	76.1848	.0001
Two Vowels Together	2695.1703	42.0981	.0001
Final Vowel	2505.6778	33.6740	.0002
Consonant Digraphs	4657.9207	39.6691	.0001
Base Words	3355.3395	69.8200	.0001
Plurals	3619.5259	69.2723	.0001
Homonyms	3239.2436	59.8802	.0001
Synonyms, Antonyms	2090.1991	64.6948	.0001
Multiple Meaning	2801.1020	46.1591	.0001

Note. As the 15 schools served as the units of analysis, the analysis of variance testing the significance of mastery of each skill among treatment groups was computed with 3 degrees of freedom for the numerator and 11 degrees of freedom for the denominator.

The data summarized in Table 5 does not invalidate the four assumptions inherent to the planning and implementation of this study.

A summary of the analysis of variance which tested the significance of gain in the percentage of pupils mastering each skill among treatment groups is presented in Table 6. The school was used as the unit of analysis. Upon the examination of the levels of significance, it is clear that the difference for only one skill, base words, was significant at the $p<.02$ level in relation to treatment groups. Keeping in mind that the base words skill was the only skill out of the total of twenty-sever skills to have a significant difference ($p<.05$), a post hoc analysis was not done because of the possibility that the difference occurred by chance. Further, seventeen skills had a level of significance greater than the $p<.500$ level.

When interpreting Table 6, two qualifications should be considered. First, the school was used as a unit of measure in the analysis. This permitted only a gross measure that was insensitive to individual pupil changes. Thus, the analysis of variance employed is a conservative estimate of treatment effects. The second qualification is concerned with the incentives given to the teachers. It is possible that the incentives actually did not act as incentives because of differences in each teacher's values. If these two aspects are considered, they may help to explain that gross studies frequently fail to show one motivational incentive to be significantly different from others.

Questions and Hypothesis

The questions used to direct the testing of the first hypothesis are considered here.

TABLE 6

SUMMARY OF ANALYSIS OF VARIANCE:
CHANGE SCORES AMONG TREATMENT GROUPS

Dependent Variable	Mean Squares	Univariate F	P<
Beginning Consonants	8.673	.137	.935
Ending Consonants	17.233	.221	.879
Consonant Blends	11.329	.147	.929
Rhyming Elements	53.667	1.895	.189
Short Vowels	73.696	1.350	.308
Consonant Digraphs	30.024	.509	.684
Compound Words	3.690	.096	.960
Contractions	77.850	2.270	.137
Base Words	71.366	4.349	.029
Plurals	48.613	.998	.429
Possessives	9.051	.190	.900
Consonant Variants	.992	.030	.992
Consonant Blends	25.466	.261	.851
Long Vowels	24.315	.498	.690
Vowels + r, a + l, a + w	37.867	.878	.482
Diphthongs	14.235	.166	.916
Long & Short oo	32.838	.707	.567
Middle Vowel	7.812	.112	.951
Two Vowels Separated	90.186	1.619	.241
Two Vowels Together	10.512	.164	.918
Final Vowel	51.501	.692	.575
Consonant Digraphs	132.027	1.124	.381
Base Words	41.566	.864	.488
Plurals	30.950	.592	.632
Homonyms	78.580	1.452	.280
Synonyms, Antonyms	5.645	.174	.911
Multiple Meaning	43.409	.715	.563

Note. As the 15 schools served as the units of analysis, the analysis of variance testing the significance of mastery of each skill among treatment groups was computed with 3 degrees of freedom for the numerator and 11 degrees of freedom for the denominator.

1. Does monitoring of pupil reading skill mastery without feedback to the teacher act as a teacher incentive?

2. Does monitoring of pupil reading skill mastery and providing teachers with informational feedback affect the amount of pupil learning.

3. Does monitoring of pupil reading skill mastery and providing teachers with monetary incentives affect the amount of pupil learning?

All three questions can be answered together. Based on the preceding discussion, it is clear that during this study the change (amount) of skill mastery was significantly different at the $p<.0001$ level, but no significant difference could be detected between groups at the $p<.05$ level except for one skill.

The first hypothesis, that pupils in the control group and pupils in the experimental groups will not differ significantly in reading skill mastery, is accepted in view of the preceding discussion.

Results and Discussion of Measures of Teachers' Perceptions of Interpersonal Variables

This discussion is presented as a guide for evaluating the data used to test the second hypothesis: Teachers in the control group and teachers in the experimental groups will not change their perceptions of selected interpersonal variables. One question served as a guide to direct the testing of the hypothesis. The question was: Do incentives based upon pupil achievement affect teachers' perceptions of interpersonal variables related to school learning climate, staff meetings, building principal, and innovation? The answer to this question was formalized from data derived from this study.

Selected questions on the teacher questionnaire were used to measure the teachers' perceptions as described in the previous chapter. The answers were scored on a scale of varying weight so that a numerical value could be assigned to each response. Also, the sequence of the weighting was reversed on selected questions. (See Table 7 for the selected questions and scale used to measure teachers' perceptions.) Changes in the teachers' perceptions could be determined and measured as a result of assigning a number value to each response.

The mean and standard deviation was calculated by group on all of the measures. Differences between the two means were tested for significance by t tests. The results of the t tests indicated that slight changes did occur. In several instances the change was negative. However, there were no significant changes at the $p<.05$ level in any of the treatment groups between the pre and post measures. (See Appendix J for the summaries of changes in pre and post measures of teachers' perceptions of interpersonal variables. Further, see Table 8 for the numbers of teachers who completed questionnaires.) For all of the treatment groups on all of the measures the obvious answer to the guide question was that no significant change at the $p<.05$ level occurred. Two considerations should be kept in mind when interpreting the summaries in Appendix J. The treatment group was the unit of measure in the analysis to insure that teachers' identities remained anonymous. Thus, it was impossible to detect changes by individual teachers. Further, the size of the sample was small (see Table 8). The second consideration necessary for interpreting Appendix J is related to the incentives given to teachers. As mentioned in the discussion of pupil achievement,

TABLE 7

SELECTED QUESTIONS AND SCALE USED TO MEASURE TEACHERS' PERCEPTIONS

Interpersonal Variables	Questionnaire Numbers	Points on Scale
Climate	1-12	5
Adaptiveness	15, 18, 21	3
Openness	13, 14, 16, 17, 22*	3
Trust	19*, 23	3
Openness in Staff Meetings	39, 42, 46, 47*, 49	6
Powerlessness	26, 27*, 32*, 35*, 36*, 37, 40*, 41*, 43*, 45*, 48*	6
Group Problem Solving Adequacy	28*, 29, 30, 31*, 33, 34*, 38*, 44	6
Executive Professional Leadership	54, 55	7
Managerial Support	56*	7
Social Support	57, 58, 59*, 60, 61, 62*	7
Reasons for Not Being Innovative	63*, 64*, 65, 66*, 67, 68, 69, 70, 71*	5
Development of New Teaching Practices	72-77	3
Sources of Innovation	78-90	4

*Reversed Weighting

it is possible that the incentives did not act as incentives because of differences in individual teacher's values.

TABLE 8

NUMBERS OF TEACHERS COMPLETING QUESTIONNAIRES ON PRE AND POST MEASURES

Treatment Group	Pretest	Posttest
Monetary	13	13
Monitor	24	25
Control	10	10
Feedback	13	14

A split-half reliability for each measure was also calculated. Four of the measures, Adaptiveness, Openness, Trust, and Reasons for Not Being Innovative had low correlations ranging from -.45 on the Adaptiveness pretest to .56 on the Trust posttest. Managerial Support was measured by only one item; hence, a perfect correlation of 1.00 is shown. The reliabilities of the other measures range from .60 on the Climate pretest to .91 on the Social Support posttest. (See Table 9 for the split-half reliabilities on all of the pre and post measures.)

Two characteristics, reliability and validity, of the questionnaire, used to measure the teachers' perceptions, need to be clarified. First, the reliability of the four measures mentioned previously was so low that further interpretation would be questionable. In fact, on

TABLE 9

SPLIT-HALF RELIABILITY ON PRE- AND POST MEASURES OF TEACHERS' PERCEPTIONS

Dependent Variables	Pre Split-Half Reliability	Post Split-Half Reliability
Climate	.60	.68
Adaptiveness	- .45	.03
Openness	.22	.55
Trust	.07	.56
Openness in Staff Meetings	.79	.78
Powerlessness	.79	.86
Group Problem Solving Adequacy	.82	.83
Executive Professional Leadership	.69	.82
Managerial Support	1.00	1.00
Social Support	.74	.91
Reasons for Not Being Innovative	- .13	.48
Development of New Teaching Practices	.80	.74
Sources of Innovation	.83	.76

two of the measures, Adaptiveness and Reasons for Not Being Innovative, a negative correlation exists indicating that the data are meaningless. However, the remaining nine measures have a split-half reliability of .60 or higher and therefore can be considered. Second, the interpersonal variables measured are perceptions and are subject to various interpretations.

Question and Hypothesis

The question used to direct the testing of the second hypothesis is considered here. Do incentives, based upon pupil achievement, affect teachers' perceptions of interpersonal variables related to the school learning climate, staff meetings, building principal, and innovation? Analysis of the data revealed no significant differences at the $p<.05$ level. Thus, the answer to the guide question is negative.

The second hypothesis, that teachers in the control group and teachers in the experimental groups will not change their perceptions of selected interpersonal variables, is accepted in view of the preceding discussion.

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CHAPTER IV

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR RESEARCH IN READING

Summary

This study was planned and implemented to investigate the effects of three motivational treatments given to selected teachers. The effects of the treatments were measured in terms of changes in (a) pupil reading achievement, and (b) teachers' perceptions of selected interpersonal variables. The three motivational treatments were characterized by (a) pupil reading achievement monitored without feedback to teachers, (b) social incentives given to teachers, and (c) money incentives given to teachers. The study was characterized by a pretest-posttest control group design with randomization. The effects of the three motivational treatments were compared in one control and three experimental groups.

The primary contribution of this study is that an attempt was made to combine and show relationships between teacher incentive procedures and (a) observable and measurable pupil reading skill achievement, and (b) changes in the teachers' perceptions of interpersonal variables.

Evidence was cited to support certain assumptions germane to the design and implementation of this study. The assumptions are related to behavioral objectives, eclectic methodology, teacher effectiveness, measurement of pupil reading skill achievement, monitoring pupil achievement

and payment of money incentives to teachers.

Two hypotheses were tested. They are:

1. Pupils in the control group and pupils in the experimental groups will not differ significantly in reading skill mastery.

2. Teachers in the control group and teachers in the experimental groups will not change their perceptions of selected interpersonal variables.

The population from which the participating schools was drawn included schools in Connecticut, Illinois, Minnesota, and Wisconsin. Fifteen schools, a total of 1,703 pupils and 69 staff teachers participated until the conclusion of the study.

A multiple analysis of variance and descriptive statistics were examined to determine the effects of the variables.

The Multiunit School-Elementary (MUS-E) provided the administrative model and an organization of instruction for the purpose of implementing this study. In addition to operating under the multiunit plan, the school staffs which participated in this study were implementing the Wisconsin Design for Reading Skill Development (WDRSD). The Wisconsin Tests for Reading Skill Development (WTRSD) (Kamm, et al., 1972) were the means of monitoring pupil progress. They provide criterion-referenced tests for assessing pupil reading skill mastery.

The reading skill achievement of all pupils was measured before teachers were notified of their assignment to a treatment group.

All tests administered as pretest and posttest measures were optically scanned and computer scored by Interpretive Scoring Systems, a division of National Computer Systems, Inc., Minneapolis, Minnesota.

Several selected sections of an instrument designed by the Cooperative Project in Educational Development were used to measure the teachers' perceptions of four areas of interpersonal variables. The perceptions of staff interpersonal variables were measured on a pre and post questionnaire.

After administering the pupil pretests and completing the teacher questionnaires, each school staff was informed of its assignment to one of the four randomly selected treatment groups. After staff reading teachers in the control group completed the pre-questionnaires and administered the WTRSD to the pupils, they had no further contact with the investigator. In the monitoring group, the pupil achievement was monitored by the investigator. Staff reading teachers in the instructional feedback group followed the same testing procedures; however, after a summary of pupil skill mastery had been submitted to the investigator, teachers were given informational feedback and social incentives. Staff teachers in the monetary incentive group also followed the same testing procedure; however, the summary of pupil reading skill mastery which was submitted was used by the investigator as the basis for providing money incentives to staff teachers.

The differences in pretest and posttest measures were reported in terms of the numbers of reading skills mastered by pupils and the significance of mean score changes in interpersonal variables perceived by teachers. Differences in reading skill mastery between groups were also compared.

Conclusions

Three main conclusions of this study follow.

1. In all of the treatment groups and on all but three of the WTRSD measures, the percentage of pupils mastering skills was significantly higher at the $p<.0001$ level on the posttest than on the pretest. Further, five related conclusions, which were also assumptions basic to implementing this study can be drawn: (a) behavioral objectives can provide the necessary basis for setting goals, developing materials, measuring achievement, and providing incentives; (b) an eclectic approach to teaching can be employed without harmful effects; (c) educational effectiveness can be measured in terms of objectives achieved; (d) pupil reading skill achievement can be measured very specifically in terms of skills mastered; and (e) incentives can be given to teachers, based on pupil reading skill mastery, without harmful effects on pupil reading skill mastery or teachers' perceptions of interpersonal variables.

2. The analysis of the gains in the percentage of pupils mastering skills between treatment groups revealed no significant difference at the $p<.05$ level except for one skill.

3. The analysis of the teacher questionnaires revealed that for all of the treatment groups and on all of the measures of teachers' perceptions there were no significant changes at the $p<.05$ level.

Implications

Implications for classroom reading instruction and future research in reading instruction may be drawn from the results of this study.

Classroom reading instruction. The assumptions cited previously which were basic to planning and implementing this study could also serve as the basis for classroom reading instruction. The assumptions were related to behavioral objectives, eclectic methodology, educational accountability, measuring pupil reading achievement, monitoring pupil reading achievement, and providing incentives to teachers. However, certain aspects related to providing teachers with incentives based on pupil reading skill mastery need to be considered. Providing teachers with incentives did not significantly increase the percentage of pupils mastering skills nor did it change teachers' perceptions of interpersonal variables. But providing incentives to teachers did not decrease the percentage of pupils mastering skills either. Further, no harmful changes were noted in the teachers' perceptions of interpersonal variables.

Future research in reading instruction. The assumptions cited previously might also serve as the basis for future research in reading. Again, certain considerations need to be made in regard to providing teachers with incentives. First, it is possible that because of differences in the personal values of individual teachers, different types of incentives might be considered, i.e., a different monitoring procedure, feedback from local personnel, or a larger amount of money might be considered. It is also possible that some other type of incentive to teachers might have a significant effect on pupils' achievement and teachers' perceptions. Therefore, the effects of providing teachers with different incentives should be investigated.

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APPENDIX A

PARTICIPATING SCHOOLS AND TREATMENT GROUPS

School	No. of Staff	No. of Pupils	Random No. Assigned	Group
CONNECTICUT				
Horace Belden Elem. 933 Hopmeadow Street Simsbury, CT 06070 (203) 658-5809	5	130	1	money
Towpath Elem. 50 Simsbury Road Avon, CT 06001 (203) 677-7354	6	115	2	monitor
Warehouse Point Elem. School Street Warehouse Point, CT 06088 (203) 623-2419	3	52	3	control
ILLINOIS				
Benson Elem. Benson, IL 61561 (309) 394-2233	4	66	2	monitor
Pioneer Elem. 615 Kenwood West Chicago, IL 60185	3	93	3	control
*W. J. Zahnow Elem. 301 Hamacher Street Waterloo, IL 62298 (618) 939-8546	*	*	4	feedback
MINNESOTA				
Birch Lake Elem. 2260 Birch Lake Avenue White Bear Lake, MN 55110	4	115	1	money
Lake Johanna Elem. 3120 Lake Johanna Boulevard St. Paul, MN 55112 (612) 633-2846	4	91	4	feedback

School	No. of Staff	No. of Pupils	Random No. Assigned	Group
MINNESOTA (Cont'd.)				
Ralph R. Reeder Elem. 2800 North Arona Street St. Paul, MN 55113 (612) 633-0814	6	150	2	monitor
Southview Elem. 4th and Maple Streets Waconia, MN 55387 (612) 442-4451 or 443-2434	8	180	2	monitor
WISCONSIN				
Algoma Elem. 514 Fremont Street Algoma, WI 54201 (414) 487-5277	5	130	1	money
Forest Street Elem. Forest Street Black River Falls, WI 54615 (715) 284-9406	4	95	4	feedback
Hilltop Elem. 204 Cameron Road Rice Lake, WI 54868 (715) 234-8156	5	175	1	money
Lakeview Elem. 1645 South Commercial Street Neenah, WI 54956 (414) 722-2246	5	120	4	feedback
Lincoln Elem. 1155 Westwood Avenue DePere, WI 54115 (414) 336-5779 or 336-9624	4	111	3	control
Pershing Elem. 1330 South 47th Street Milwaukee, Wisconsin 53214 (414) 541-8080, Ext. 259	3	80	3	control

*Withdrew from the study in October, 1972.

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TOTAL SUBJECTS BY GROUP

Group	Staff	Pupils
control	13	336
monitor	24	511
feedback	13	306
money	19	550
	69	1,703

KEY TO RANDOM ASSIGNMENT

condition	control	monitor	feedback	money
random number assigned	3	2	4	1

APPENDIX B

DEMOGRAPHIC INFORMATION

School	City Population	School Enrollment	Median School Years Completed by Adults	Mean Income
Control Group				
Warehouse Point	700	303	12.1	$12,957
Pioneer	10,369	279	12.2	13,342
Lincoln	13,403	170	12.3	13,028
Pershing	71,720	223	12.1	10,223
Monitor Group				
Towpath	8,352	371	12.8	$18,470
Benson	490	60	--	--
Reeder	310,004	504	12.2	12,998
Southview	2,445	663	--	--
Feedback Group				
Lake Johanna	310,004	325	12.2	$12,998
Forest Street	3,273	211	11.9	9,084
Lake View	22,815	461	12.4	13,587
Money Group				
Belden	17,475	385	16.0	$17,881
Birch Lake	23,340	726	12.6	13,981
Algoma	4,001	606	11.7	10,225
Hilltop	7,278	275	12.2	9,739

Note. -- City population, school years completed, and mean income information was obtained from the U.S. Bureau of the Census, Census of Population: 1970 General Social and Economic Characteristics, Final Report PC (1) - C8 Connecticut, C15 Illinois, C25 Minnesota, and C51 Wisconsin. Published by the U.S. Government Printing Office, Washington, D.C., 1972. School enrollment information was obtained directly from each school.

APPENDIX C

Statement of Wisconsin Design
Skills, Objectives[1] and Test Descriptions[2]

Word Attack

Level B

Phonic analysis skills

a. Consonant sounds

1) Beginning consonant sounds

Objective: Given real or nonsense words pronounced by the teacher, the child

- identifies the letter that stands for the initial sound and
- tells whether two words do or do not begin alike; or
- supplies another word that begins with the same sound.

Test 3--Beginning Consonant Sounds. For the first ten items the child selects the beginning consonant sound that he hears in dictated nonsense words. For the last tem items he determines whether pairs of dictated nonsense words have the same beginning consonant sound (15 items)

2) Ending consonant sounds

Objective: Given real or nonsense words pronounced by the teacher, the child

- identifies the letter that stands for the ending sound and
- tells whether two words do or do not end alike; or
- supplies another word that ends with the same sound.

Test 4--Ending Consonant Sounds. For the first ten items the child selects the ending consonant sound that he hears in dictated nonsense words. For the last ten items he determines whether pairs of dictated nonsense words have the same ending consonant sound. (15 items)

b. Consonant blends

Objective: Given real or nonsense words that begin with the consonant blends *bl, cl, fl, gl, pl, sl, br, cr, dr, fr, gr, pr, and tr.*

- identifies the two letters that stand for the initial blend in words pronounced by the teacher; or
- identifies words that begin with the same blend as a stimulus word pronounced by the teacher and
- pronounces words that begin with the blends listed above.

Test 5--Consonant Blends. In response to dictated nonsense words the child selects the blend that he hears in each nonsense word. Blends tested are *bl, cl, fl, gl, pl, sl, br, cr, dr, fr, gr, pr, and tr.* (20 items)

c. Rhyming elements

Objective: Given a word, the child

- selects a rhyming word based on structure (e.g., *man, pan,* and *fan* are from the same word family); or
- supplies a real or nonsense rhyming word based on structure.

Test 6--Rhyming Elements. This test measures the ability to use structure in selecting a word that rhymes with a printed stimulus word. (20 items)

d. Short vowels

Objective: Given a one-sullable word with a single short vowel sound pronounced by the teacher (e.g . man, duck, doll, hop), the child

- identifies the letter that stands for the vowel sound; or
- reproduces the vowel sound.

Test 7--Short Vowels. In response to dictated nonsense words the child selects the vowel that he hears in each nonsense word. (15 items)

e. Simple consonant digraphs

Objective: Given real or nonsense words pronounced by the teacher, the child identifies the letters in the simple two-consonant combinations *sh*, *ch*, *th*, that result in a single new sound.

Test 8--Consonant Digraphs. The child selects the digraph that he hears in dictated nonsense words. Digraphs tested are *ch*, *sh*, and *th*. (17 items)

Structural analysis skills

a. Compound words

Objective: The child

- identifies compound words; or
- specifies the elements of a compound word.

Test 9--Compound Words. The child selects the compound word from printed response choices read by the test administrator. (17 items)

b. Contractions

Objective: The child

- identifies simple contractions (e.g., I'm, it's, can't)
- uses contractions correctly in sentences.

Test 10--Contractions. This test measures the ability to select the correct contraction for use within a given sentence. (15 items)

c. Base words and endings

Objective: The child identifies the root word in familiar inflected words (e.g., *jumping*, *catches*, *runs*).

Test 11--Base Words and Endings. From printed response choices the child selects the correctly underlined base, or root, part of the word (12 items)

d. Plurals

Objective: The child tells whether familiar words (noun plus *s* or *es*) are singular or plural.

Test 12--Plurals. This test measures the child's ability to recognize a printed word as representing *one* or *more* than one. (12 items)

e. Possessive forms

Objective: The child identifies the possessive forms of nound used in context.

Test 13--Possessives. From printed response choices read by the test administrator the child selects the phrase containing a possessive form. (20 items)

*All group test items are in multiple-choice format.

Level C

Phonic analysis skills

a. Consonants and their variant sounds

Objective: Given words containing variant sounds of *c*, *s*, and *g* (e.g., *c*ake-*c*ity, *s*it-tree*s*, *g*o-*g*iant), the child indicates whether the underlined letters in given pairs of words have the same or different sounds.

Note: Although the consonants *c*, *g*, *s*, *q*, *d*, *x*, *t*, and *z* have more than one sound, variant sounds of *c*, *s*, and *g* are most common at this level.

Test 2--Consonants and Their Variant Sounds. This test measures the child's ability to discriminate the variant sounds of *c*, *s*, and *g*. He determines whether underlined letters in pairs of words, e.g., *g*ider and *c*ake, have the same or different sounds. (24 items)

b. Consonant blends

Objective: Given real or nonsense words beginning with the consonant blends *st*, *sk*, *sm*, *sp*, *sw*, *sn*, the child

- identifies the two letters that stand for the initial blend in words pronounced by the teacher; or
- identifies words that begin with the same blend as a stimulus word pronounced by the teacher and
- pronounces words that begin with the blends listed above.

Test 3--Consonant Blends. In response to dictated nonsense words the child selects the blend that he hears in each nonsense word. Blends tested are *sm*, *sw*, *st*, *sn*, *sp*, and *sk*. (15 items)

c. Vowel sounds

1) Long vowel sounds

Objective: The child

- identifies the letter that stands for a single vowel sound in real or nonsense words pronounced by the teacher (e.g., nose, brile, cheese, seat, labe, run, mab) and indicates whether the sound is long or short; or
- pronounces real or nonsense words with a single vowel sound.

Test 4--Long Vowel Sounds. In response to dictated nonsense words the child not only identifies the vowel heard in each word, but also indicates whether the vowel sound is long or short. (30 items)

2) Vowel plus *r*

Objective: The child

- identifies the vowel that is with *r* in real or nonsense words pronounced by the teacher (e.g., darl, der, mur, form, girt); or
- pronounces words with r-controlled vowels (e.g., part, fur, hurt, bird).

Note: Because *er*, *ir*, and *ur* have the same sound, *e*, *i*, and *u* is the appropriate response in *er*, *ir*, and *ur words*.

3) *a* plus *l*

Objective: The child

- identifies the letters that stand for the *al* sound in real or nonsense words pronounced by the teacher; or
- pronounces words in which there is an *al* combination (e.g., salt, ball, zall).

4) *a* plus *w*

Objective: The child

- identifies the letters that stand for the *aw* sound in real or nonsense words pronounced by the teacher; or
- pronounces words in which there is an *aw* combination (e.g., draw, saw, blaw).

Test 5--Vowel + r, a + l, a + w. With response choices of *ar*, *er-ir-ur*, *or*, *al*, and *aw*, this test measures the child's ability to recognize the vowel plus letter-after-the-vowel heard in dictated nonsense words. (17 items)

5) Dipthongs *ew*, *oi*, *oy*, *ou*, *ow*

Objective: Given words containing *ew*, *oi*, *oy*, *ou*, *ow*, the child

- identifies the dipthong in nonsense words pronounced by the teacher; or
- pronounces words containing dipthongs.

Test 6--Dipthongs. With response choices of *ew*, *oi-oy*, and *ou-ow*, this test measures the child's ability to recognize the dipthong heard in dictated nonsense words. (15 items)

6) Long and short *oo*

Objective: The child

- indicates whether the *oo* in words has the long *oo* (e.g., choose) or the short *oo* (e.g., book) sound; or
- pronounces words in which there is an *oo* combination.

Test 7--Long and Short oo. The child determines whether each printed word has a long or short *oo* sound. (15 items)

d. Vowel generalizations

1) Short vowel generalization

Objective: Given real or nonsense words in which there is a single vowel and a final consonant (e.g., bag, his, cat, gum), the child

- tells whether the words are pronounced according to the generalization; or
- pronounces the words giving the vowel its short sound.

Note: Children should learn that some familiar sight words are exceptions to this generalization (e.g., bold, find, sight, wild).

Test 8--Middle Vowel. The child's knowledge of the *middle vowel* generalization is tested; when there is a single vowel in the middle of a word, the vowel usually has a short sound. For the first ten items he indicates whether the test administrator pronounces printed nonsense words according to the rule. The last five items are printed real words composed of those that follow the rule and exceptions. The child indicates whether the test administrator pronounces each real word correctly. (15 items)

2) Silent *e* generalization

Objective: Given real or nonsense words that have two vowels, one of which is a final *e* separated from the first vowel by a consonant (e.g., cake, cube, mape, jome), the child

- tells whether the words are pronounced according to the generalization; or
- first attempts pronunciation by making the first vowel long and the final *e* silent.

Note: Children should learn that some familiar words are exceptions to this generalization (e.g., come, have, prove).

Test 9--Two Vowels Separated. The child's knowledge of the *two vowels separated* generalization is tested; a vowel in a word that ends in silent *e* usually has a long sound. The assessment procedure is the same as that for Tests 8, 9, 10. (15 items)

3) Two vowels together generalization

Objective: Given real or nonsense words that have two consecutive vowels (e.g., boat, meet, bait, deach), the child

- tells whether the words are pronounced according to the generalization; or
- first attempts pronunciation by making the first vowel long and the second vowel silent.

Note: Children should learn that some familiar sight words (e.g., bread, August) and words containing diphthongs are exceptions to this generalization.

Test 10--Two Vowels Together. The child's knowledge of the *two vowels together* generalization is tested; when two vowels appear together in a word, the first is usually long and the second vowel is silent. The assessment procedure is the same as that for Tests 8, 9, and 11. (15 items)

4) Final vowel generalization

Objective: Given real or nonsense words in which the only vowel is at the end (e.g., go, she, thi), the child

- tells whether the words are pronounced according to the generalization; or
- pronounces the words giving the vowel its long sound.

Note: Children should learn that some familiar sight words are exceptions to this generalization (e.g., do, who)

Test 11--Final Vowel. The child's knowledge of the *final vowel* generalization is tested; when the only vowel appears at the end of a word, it usually has a long sound. The assessment procedure is the same as that for Tests 8, 9, and 10. (15 items)

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e. Common consonant digraphs

Objective: Given real or nonsense words pronounced by the teacher, the child identifies the letters in the two-consonant combinations *ch, nk, sh, ng, th, wh,* that result in a single new sound.

Test 12--Consonant Digraphs. The child selects the digraph that he hears in dictated nonsense words. Digraphs tested are *ch, nk, sh, ng, th,* and *wh.* (15 items)

Structural analysis skills

a. Base words with prefixes and suffixes

Objective: The child selects base words with or without affixes that are appropriate to the context.

Test 13--Base Words. This test measures the child's ability to select the correct affix for a word as used within a given sentence. (15 items)

b. More difficult plural forms

Objective: The child tells whether more difficult plural forms (e.g., mice, ladies, children) are singular or plural.

Test 14--Plurals. The child determines whether each printed word represents *one* or *more* than one. (16 items)

Distinguishes among homonyms, synonyms, and antonyms

a. Homonyms

Objective: Given a sentence context, the child chooses between homonyms (e.g., Mother bought some *meet/meat* for dinner).

Test 15--Homonyms. This test measures the child's ability to select the correct homonym for use within a given sentence. (18 items)

b. Synonyms and antonyms

Objective: The child tells whether words in a pair have the same, opposite, or simply different meanings.

Test 16--Synonyms and Antonyms. For each item the child must determine whether two stimulus words are the *same, opposite,* or simply *different* in meaning. (16 items)

6. Chooses appropriate meaning of multiple meaning words.

Objective: Given a multiple-meaning word in varied contexts, the child chooses the meaning appropriate to a particular context.

Test 18--Multiple Meanings. This test measures the child's ability to select the correct meaning of a word as used in a given sentence. (15 items)

[1]Otto and Askov, Rationale and Guidelines (Minneaplis, Minnesota: National Computer Systems, Inc., 1972) pp. 125-131.

[2]Miles, Pamela; Kamm, Karlyn; and Stewart, Deborah. The Wisconsin Tests of Reading Skill Development Test Administrator's Manual: Word Attack Level B -- Forms P and Q (Minneapolis, Minnesota: National Computer Systems, Inc., 1972). All group test items are in multiple-choice format (p. 4) . . . Reliabilities of individual tests are in the .70's and .80's with a few in the .90's. The tests are criterion-referenced. Skills have been identified and behavioral objectives stated -- see Appendix B, Rationale and Guidelines. The tests have been constructed to measure these skills. Thus the content validity of the tests may be inferred. Further specific information appears in the Technical Manual: Word Attack (p. 24).

Miles, Pamela; Kamm, Karlyn; and Stewart, Deborah. The Wisconsin Tests of Reading Skill Development Test Administrator's Manual: Word Attack Level C -- Forms P and Q (Minneapolis, Minnesota: National Computer Systems, Inc., 1972) pp. 4-5

APPENDIX D

DIRECTIONS FOR TESTING

BASELINE DATA, FALL 1972

1. The purpose for gathering these test data is to measure the "change score," or skill improvement, during the course of seven skill instruction periods. Wisconsin Design-Word Attack skill instruction periods usually last approximately two to three weeks. Thus, this observation will be completed in approximately fourteen to twenty-one school weeks.

2. Obtain Wisconsin Tests for Reading Skill Development-Word Attack (WTRSD-WA) from your principal or unit leader. You should have two test booklets for each child:

(A) WTRSD-WA - Level B;

(B) WTRSD-WA - Level C.

3. Become familiar with the directions for test administration in the Teacher's Manual. DO NOT try to administer the tests without first familiarizing yourself with the test directions and materials.

4. Please print each child's name on a Level B and on a Level C test booklet. School name and city should also be included.

5. Attempt to administer the complete machine scorable Level B and C tests, regardless of pupils' past reading achievement levels. If a child misses a sitting, attempt to "pick him up" before the completion of the testing.

6. Teacher observation is important. Because of the wide range of level of difficulty between Level B and Level C WTRSD-WA, teachers might acknowledge the following considerations: Pupils should be encouraged to complete as many test items as possible. If it seems obvious to the teacher administering the tests that certain pupils become frustrated because certain tests are too difficult, pupils should be excused from taking that particular skill test.

7. Schedule testing in a way that is most convenient with the existing schedule. (Early morning and early afternoon is suggested.)

8. Try to complete testing by September 22, 1972.

9. Arrange tests in alphabetical order (Level B and C separated), bind with a rubber band or string, return them to the administrator's office. Have two test booklets for each pupil.

10. DO NOT hand score the tests.

11. If you have any further questions regarding the administration of the tests please call me collect.

Roger Klumb
Wisconsin Research and Development Center
for Cognitive Learning
1404 Regent Street
Madison, Wisconsin 53706
(608) 262-2539

APPENDIX E

SUGGESTED TESTING SEQUENCE

Groups	Pretest	2 wk. to 3 wk.	4 wk. to 6 wk.	6 wk. to 9 wk.	8 wk. to 12 wk.	10 wk. to 15 wk.	12 wk. to 18 wk.	14 wk. to 21 wk.	Posttest
Control	T_1	--	--	--	--	--	--	--	T_2
Monitoring	T_1	t_1	t_2	t_3	t_4	t_5	t_6	t_7	T_2
Social Reinforcement	T_1	t_1	t_2	t_3	t_4	t_5	t_6	t_7	T_2
Monetary Reinforcement	T_1	t_1	t_2	t_4	t_4	t_5	t_6	t_7	T_2

Note. -- T_1 and T_2 measure pupil reading achievement for baseline and comparison test data. t_1, t_2 . . . measure specific skill achievement at the conclusion of each 2-3 week skill instruction for the purpose of determining pupil skill mastery

APPENDIX F

Climate (Teachers)

The following statements refer to aspects of any school. Please indicate whether you completely agree, somewhat agree, are neutral, somewhat disagree, or completely disagree that the statement describes how you feel about your school.

Please circle all your answers.

	Completely Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Completely Agree
1. I find my job very exciting and rewarding.	0	1	2	3	4
2. I am just a cog in the machinery of this school.	0	1	2	3	4
3. I feel involved in a lot of activities that go on in this school.	0	1	2	3	4
4. I do things at school that I wouldn't do if it were up to me.	0	1	2	3	4
5. I really don't feel satisfied with a lot of things that go on in this school.	0	1	2	3	4
6. In the long run, it is better to be minimally involved in school affairs.	0	1	2	3	4
7. I have a lot of influence with my colleagues on educational matters.	0	1	2	3	4
8. I feel close to other teachers in this school.	0	1	2	3	4
9. I usually run my classes pretty much to suit myself.	0	1	2	3	4
10. I like this school because you aren't hampered by red tape.	0	1	2	3	4
11. I feel that having close and personal relationships with other teachers is important.	0	1	2	3	4
12. I feel that in this school professional relationships are also friendly.	0	1	2	3	4

Do's and Don'ts

In any school system, there are informal "do's and don'ts." They are rarely written down anywhere, but they serve as a kind of code, making it clear what people in the system should and should not do, if they are to be accepted by others.

Below are some items that might fit, positively or negatively, into such a code. We are very much interested in assessing what your own attitudes on these items are. Please think about how you, yourself, feel about each of these items. Naturally, your feeling will depend on the particular circumstances involved. Try to consider how you typically feel in most situations.

Place a mark on the answer sheet in the column which shows what your own attitude is. For instance, on Item 13, if you, yourself, feel that you SHOULD tell colleagues what you really think of their work, you would circle number 2 under I feel you should. Please circle all your answers.

SHOULD ONE:	No feeling one way or the other	I feel you should not	I feel you should
13. Tell colleagues what you really think of their work.	0	1	2
14. Disagree with your superior if you happen to know more about the issue than he does.	0	1	2
15. Push for new ideas, even if they are vague or unusual.	0	1	2
16. Ask others to tell you what they really think of your work.	0	1	2
17. Point out other people's mistakes, to improve working effectiveness.	0	1	2
18. Try out new ways of doing things even if it's uncertain how they will work out.	0	1	2
19. Stay "cool"—keep your distance from others.	0	1	2
20. Set up committees which by-pass or cut across usual channels or lines of authority.	0	1	2
21. Be skeptical about accepting unusual or "way out" ideas.	0	1	2
22. Tell other people what they want to hear, rather than what you really think.	0	1	2
23. Trust others to be helpful when you admit you have problems.	0	1	2

Meetings

The philosopher Martin Buber once said, "All life is meeting." No matter how that statement makes you feel, you will probably agree that school systems hold a lot of meetings, and that much depends on their quality. We are thinking especially of the unit meetings held in your school.

We would like you to consider this type of meeting which is important to you, and to which you go regularly. Specifically, please consider the faculty unit meetings in your building.

24. How often does it usually meet?
___ once a week
___ once every 2 weeks
___ once every 3 weeks
___ once a month
___ once every 2 months
___ once a semester
___ once a year

25. Length of typical meeting:
___ 1/2 hour
___ 1 hour
___ 1 1/2 hours
___ 2 hours
___ 2 1/2 hours
___ 3 hours
___ more than 3 hours

Now, please consider what usually or typically happens in these meetings. For each of the items below, mark one of the following numbers. Use the same scale for items 26 through 49.

0 This is not typical at all; it never happens.
1 This is quite untypical; it rarely happens.
2 This is more untypical than typical, though it does happen some.
3 This is more typical than not, but it doesn't happen a lot.
4 This is fairly typical of this meeting; it happens quite often.
5 This is very typical of this meeting; it happens repeatedly.

26. ___ When problems come up in the meeting, they are thoroughly explored until everyone understands what the problem is.

27. ___ There are many problems which people are concerned about which never get on the formal or informal agenda.

28. ___ There is a tendency to propose answers without really having thought the problems and their causes through carefully.

29. ___ The group discusses the pros and cons of several different alternate solutions to a problem.

30. ___ Someone summarizes progress from time to time.

31. ___ Decisions are often left vague—as to what they are, and who will carry them out.

32. ___ People are afraid to be openly critical or make good objections.

33. ___ The group discusses and evaluates how decisions from previous meetings worked out.

34. ___ People do not take the time to really study or define the problems they are working on.

0 This is not typical at all; it never happens.
1 This is quite untypical; it rarely happens.
2 This is more untypical than typical, though it does happen some.
3 This is more typical than not, but it doesn't happen a lot.
4 This is fairly typical of this meeting; it happens quite often.
5 This is very typical of this meeting; it happens repeatedly.

35. ___ The same few people seem to do most of the talking during the meeting.

36. ___ People hesitate to give their true feelings about problems which are discussed.

37. ___ When a decision is made, it is clear who should carry it out, and when.

38. ___ There is a good deal of jumping from topic to topic—it's often unclear where the group is on the formal or informal agenda.

39. ___ From time to time in the meeting, people openly discuss the feelings and working relationships in the group.

40. ___ The same problems seem to keep coming up over and over again from meeting to meeting.

41. ___ People don't seem to care about the meeting, or want to get involved in it.

42. ___ Some very creative solutions come out of this group.

43. ___ Many people remain silent.

44. ___ When conflicts over decisions come up, the group does not avoid them, but really stays with the conflict and works it through.

45. ___ The results of the group's work are not worth the time it takes.

46. ___ People give their real feelings about what is happening during the meeting itself.

47. ___ People feel antagonistic or negative during the meeting.

48. ___ The discussion goes on and on without any decision being reached.

49. ___ People feel satisfied or positive during the meeting.

* *

GPO 804-849-6

Unit meetings vary according to their primary focus of attention. They may be mainly focused on information giving—making announcements, explaining plans or rules, dealing with routine matters. Or they may be mainly focused on problem solving—discussion and decision, working out problems on the spot. Thinking now of the meeting you have been describing, what percentage of time do you estimate is actually spent on these two kinds of activities? Mark the figures on this page. (Items 50 and 51 should total approximately 100%, e.g., 30-39% + 50-59% = 100%).

50. Time spent on information giving:

___ 0-9%
___ 10-19%
___ 20-29%
___ 30-39%
___ 40-49%
___ 50-59%
___ 60-69%
___ 70-79%
___ 80-89%
___ 90-100%

51. Time spent on problem solving:

___ 0-9%
___ 10-19%
___ 20-29%
___ 30-39%
___ 40-49%
___ 50-59%
___ 60-69%
___ 70-79%
___ 80-89%
___ 90-100%

Item 50 + Item 51 = approximately 100%

Now, still thinking of this meeting, what percentage of time do you think should be or ought to be spent on these two types of activities, as far as you are concerned? (Items 52 + 53 should total approximately 100%.)

52. Time that should be spent on information giving:

___ 0-9%
___ 10-19%
___ 20-29%
___ 30-39%
___ 40-49%
___ 50-59%
___ 60-69%
___ 70-79%
___ 80-89%
___ 90-100%

53. Time that should be spent on problem solving:

___ 0-9%
___ 10-19%
___ 20-29%
___ 30-39%
___ 40-49%
___ 50-59%
___ 60-69%
___ 70-79%
___ 80-89%
___ 90-100%

Item 52 + Item 53 = approximately 100%

Your Principal

To what extent does your principal engage in the following kinds of behavior? In answering, please mark the one column that best describes the behavior of your principal. Please circle all your answers.

Your Principal:	Never	Almost never	Occasionally	Frequently	Almost always	Always	I do not know
54. Gives teachers the feeling that they can make significant contributions to improving the classroom performance of their students.	0	1	2	3	4	5	6
55. Takes a strong interest in my professional development.	0	1	2	3	4	5	6
56. Makes a teacher's life difficult because of his administrative ineptitude.	0	1	2	3	4	5	6
57. Displays integrity in his behavior.	0	1	2	3	4	5	6
58. Puts you at ease when you talk with him.	0	1	2	3	4	5	6
59. Makes those who work with him feel inferior to him.	0	1	2	3	4	5	6
60. Develops a real interest in your welfare.	0	1	2	3	4	5	6
61. Develops a "we feeling" in working with others.	0	1	2	3	4	5	6
62. Rubs people the wrong way.	0	1	2	3	4	5	6

Innovations

"Innovation is a species of the genus 'change.' . . . a deliberate, novel, specific change, which is thought to be more (effective) in accomplishing the goals of the system." (Mathew Miles, Innovations in Education.) The next sections relate to the manner in which innovations are introduced and practiced in your system.

Instructions: The next 9 items relate to reasons why individuals may or may not be innovative. Indicate how you feel about your school system with regard to each item. Please circle all your answers.

	Completely Agree	Somewhat Agree	Neutral	Somewhat Disagree	Completely Disagree
63. Personnel in our system would be more innovative if funds were available to support creative projects.	0	1	2	3	4
64. The present rate of change in our school system is entirely adequate to meet our educational objectives.	0	1	2	3	4
65. Most innovations are superficial and not worth the time and effort required to initiate or maintain them.	0	1	2	3	4
66. Most people don't believe in change for the sake of change.	0	1	2	3	4
67. The administration doesn't support innovation.	0	1	2	3	4
68. There is little evidence that innovations really improve things.	0	1	2	3	4
69. Professional careers are often jeopardized by being associated with unsuccessful innovations.	0	1	2	3	4

	Completely Agree	Somewhat Agree	Neutral	Somewhat Disagree	Completely Disagree
70. The norms of this school system seem to discourage highly experimental or innovative practices.	0	1	2	3	4
71. Most people prefer to wait until more is known about an innovation before trying it.	0	1	2	3	4

Some innovations in education, like flexible scheduling, team teaching, or a major curriculum change, require the activities of different teachers to be coordinated; people must change together. Other innovations are such that an individual teacher can sometimes make the change in his own classroom without requiring that other's activities be coordinated with his (except for procuring small amounts of materials, etc.). We would like to ask some question about this last kind of innovation.

In the last year have you produced or adopted innovations of the following types in your own classroom?

	I have tried no innovations like this	I have tried one or two innovations like this	I have tried more than two innovations like this
72. Developed a new course (for slow learners, new subject, etc.)	0	1	2
73. Revised or reorganized an existing course	0	1	2
74. Used materials developed elsewhere (e.g., cuisenaire rods, tachistoscope)	0	1	2
75. Used techniques or programs developed elsewhere (e.g., programmed instruction, games)	0	1	2
76. Developed new materials myself (e.g., construction of science lab demonstration equipment from homemade materials)	0	1	2
77. Developed new techniques or programs of instruction myself (e.g., new games, new ways of presenting concepts)	0	1	2

How important is each of the following as a source of your innovations?

		Never a source of innovations	Rarely important	Sometimes important	Very important source
78.	Teachers in this school	0	1	2	3
79.	My principal	0	1	2	3
80.	Magazine or journal	0	1	2	3
81.	Workshop, conference, or institute	0	1	2	3
82.	Book	0	1	2	3
83.	Student	0	1	2	3
84.	Teacher in another school	0	1	2	3
85.	Outside consultants	0	1	2	3
86.	Graduate or undergraduate training	0	1	2	3
87.	Supervisor, coordinator, etc.	0	1	2	3
88.	Guidance worker or counselor	0	1	2	3
89.	Community, groups or individuals	0	1	2	3
90.	My own ideas	0	1	2	3

THANK YOU FOR YOUR COOPERATION.

APPENDIX G

RECORD OF WORD ATTACK MASTERY

Name of School _____

Skill Instructional Period No. _____

Total Number of Pupils in I & R Unit _____

DIRECTIONS: Indicate the number of Wisconsin Design-Word Attack skills mastered each skill instructional period, i.e., each 2-3 weeks.

1. Give credit for skill mastery, only if a pupil masters at the 80% criterion level, a WTRSD-WA separate test in the paper and pencil format.

2. Do not credit a child for mastery of more than one skill per instructional period on the following tally sheet. A given child should not receive credit for mastering more than one skill in a given 2-3 week period. (e.g., If a child masters both skills B3, Beginning Consonants, and B4, Ending Consonants, in one instructional period, give credit for either skill, not both.)

3. Tally the number of pupils mastering each specific skill. (Remember, if a child has mastered more than one skill during the 2-3 week instructional period, he should receive credit for only the first skill mastered.)

4. If no pupil masters a given skill, leave that space blank on the tally sheet.

5. Add the sum total of skills mastered at Level B.

6. Add the sum total of skills mastered at Level C.

7. Return this record to your building principal.

SKILL TALLY SHEET -- LEVEL B-WORD ATTACK

Number and Skill	Number of Students Mastering Skills
3 Beginning Consonants	
4 Ending Consonants	
5 Consonant Blends	
6 Rhyming Elements	
7 Short Vowels	
8 Consonant Digraphs	
9 Compound Words	
10 Contractions	
11 Base Words	
12 Plurals	
13 Possessives	
Total No. of Students Mastering Skills this Instructional Period	

SKILL TALLY SHEET -- LEVEL C-WORD ATTACK

Number and Skill	Number of Students Mastering Skills
2 Consonant Variants	
3 Consonant Blends	
4 Long Vowels	
5 Vowels + r, a + l, a + w	
6 Diphthongs	
7 Long & Short oo	
8 Middle Vowel	
9 Two Vowels Separated	
10 Two Vowels Together	
11 Final Vowel	
12 Consonant Digraphs	
13 Base Words	
14 Plurals	
15 Homonyms	
16 Synonyms, Antonyms	
18 Multiple Meaning	
Total No. of Students Mastering Skills this Instructional Period	

APPENDIX H

WISCONSIN RESEARCH AND DEVELOPMENT CENTER FOR COGNITIVE LEARNING

UNIVERSITY OF WISCONSIN–MADISON
1404 REGENT STREET
MADISON, WISCONSIN 53706
PHONE 262-4901 / AREA 608

MEMORANDUM

TO: (Each teacher in the "monetary incentive group" -- at the end of each instructional period)

FROM: Roger Klumb

DATE:

RE: Payment to teachers for participation in the Wisconsin Design implementation study

I have received the "Record of Word Attack Mastery" from your school. The tabulations indicate that children in your unit have mastered a word attack skill during the past skill instruction period.

Payment to you has been computed as follows:

Children mastered a skill
X .75 Credit for skill mastery
Total amount paid to your unit

$. ÷ teachers = $. per teacher

Your check for $. will be mailed to your home address.

The R & D Center business office has advised me that the processing of consultant expenses, such as yours, usually takes from two to four weeks.

If you have any further questions regarding the study, please feel free to call me collect at (608) 263-4225.

RWK/sjc

WISCONSIN RESEARCH AND DEVELOPMENT CENTER FOR COGNITIVE LEARNING

UNIVERSITY OF WISCONSIN-MADISON
1404 REGENT STREET
MADISON, WISCONSIN 53706
PHONE 262-4901 / AREA 608

MEMORANDUM

TO: (Each principal in the "monetary incentive group" -- at the end of each instructional period)

FROM: Roger Klumb

DATE:

RE: Payment to teachers participating in the Wisconsin Design implementation study

Enclosed are financial statements for teachers in your school who are participating in the Wisconsin Design study. Would you please forward these statements to the respective teachers.

Payment to each teacher has been computed as follows:

Children mastered a skill
X .75 Credit for skill mastery
Total amount paid to your unit

$. ÷ teachers = $. per teacher

Thank you for your cooperation.

RWK/sjc

GPO 804-849-8

APPENDIX I

NUMBER OF SKILLS MASTERED BY PUPILS AND AMOUNT OF MONEY

PAID TO TEACHERS IN MONETARY INCENTIVE GROUP*

Skill Inst. Period	1	2	3	4	5	6	7	Total
Skills Mastered	88	88	92	70	106	94	109	647
Amt. Paid Per Teacher	13.20	13.20	13.80	10.50	15.90	14.10	16.35	97.05
Amt. Paid Per Unit	66.00	66.00	69.00	52.50	79.50	70.50	81.75	485.25

Skill Inst. Period	1	2	3	4	5	6	7	Total
Skills Mastered	55	49	63	51	81	68	64	431
Amt. Paid Per Teacher	13.75	12.23	11.82	9.82	15.20	12.75	12.00	87.50
Amt. Paid Per Unit	41.25	36.75	47.25	39.25	60.75	51.00	48.00	324.25

- CONTINUED -

NUMBER OF SKILLS MASTERED BY PUPILS AND AMOUNT OF MONEY

PAID TO TEACHERS IN MONETARY INCENTIVE GROUP* (Continued)

Skill Inst. Period	1	2	3	4	5	6	7	Total
Skills Mastered	34	65	39	82	89	86	90	485
Amt. Paid Per Teacher	5.10	9.75	5.85	12.30	13.35	12.90	13.50	72.75
Amt. Paid Per Unit	25.50	48.75	29.25	61.50	66.75	64.50	67.50	363.75

Skill Inst. Period	1	2	3	4	5	6	7	Total
Skills Mastered**	12	43	57	26	43	27	14	222
Amt. Paid Per Teacher	2.25	8.07	10.69	7.38	8.07	5.07	2.63	44.16
Amt. Paid Per Unit	9.00	32.25	42.75	29.50	32.25	20.25	10.50	176.50

*Specific schools are not identified here.

**Only a portion of the pupils participated in the assessments, because of age limitation.

APPENDIX J

Summaries of changes in pre and post measures of teachers' perceptions of interpersonal variables are given here. A *t* test was used to measure significance of mean change by treatment group. The results of the *t* tests indicated that there were no significant changes in any of the measures at the $p<.05$ level.

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF SOURCES OF INNOVATION

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	42.53	5.19	41.69	3.37	-.84
Monitor	37.33	4.42	37.52	5.09	.19
Control	40.60	5.66	40.00	7.00	-.60
Feedback	40.30	7.18	40.57	2.50	.27

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF GENERAL SCHOOL CLIMATE

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	46.38	6.02	46.30	6.30	-.08
Monitor	45.75	4.53	45.56	4.35	-.19
Control	44.20	6.72	42.00	6.32	-.20
Feedback	42.15	3.89	42.57	5.41	.42

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THEIR ADAPTIVENESS

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	6.61	1.19	7.23	1.30	.62
Monitor	6.91	1.21	7.12	1.56	.21
Control	6.50	.84	6.50	1.35	.00
Feedback	6.38	1.55	6.35	.92	-.03

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THEIR OPENNESS

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	13.07	1.38	13.61	1.50	.54
Monitor	12.45	2.04	13.32	1.97	.87
Control	12.80	1.54	12.80	1.31	.00
Feedback	11.07	1.75	11.71	2.67	.64

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THEIR TRUST

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	5.92	.27	6.00	.00	.08
Monitor	5.75	.44	5.80	.50	.05
Control	5.90	.31	5.70	.48	-.20
Feedback	6.00	.00	5.85	.53	-.15

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THEIR OPENNESS IN STAFF MEETINGS

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	21.84	2.47	20.00	4.39	-1.84
Monitor	22.29	4.44	23.00	3.94	.81
Control	24.10	2.96	23.70	3.94	.40
Feedback	18.84	6.14	20.28	3.81	1.44

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THEIR POWERLESSNESS IN STAFF MEETINGS

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	49.38	5.81	46.07	7.14	-3.31
Monitor	48.54	8.30	47.12	10.65	-1.42
Control	51.30	5.53	49.60	9.25	-1.70
Feedback	48.23	8.27	47.71	7.54	.52

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THE GROUP PROBLEM SOLVING ADEQUACY IN STAFF MEETINGS

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	37.61	3.04	33.15	7.89	-4.46
Monitor	35.95	7.28	36.00	7.05	.05
Control	37.00	6.49	38.50	6.02	1.50
Feedback	33.46	6.41	33.78	5.39	.32

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THE BUILDING PRINCIPAL'S EXECUTIVE PROFESSIONAL LEADERSHIP

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	10.92	.95	8.30	4.04	-2.62
Monitor	8.70	2.74	8.96	2.13	.26
Control	8.70	2.98	7.30	3.02	-1.40
Feedback	8.07	2.53	8.71	2.72	.64

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THE BUILDING PRINCIPAL'S MANAGERIAL SUPPORT

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	4.84	1.67	3.92	2.21	-.92
Monitor	4.95	1.65	5.24	.77	.29
Control	5.10	.99	4.70	1.05	-.40
Feedback	5.00	1.15	4.85	1.16	-.15

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF SOCIAL SUPPORT

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	30.76	3.13	24.46	13.07	-6.30
Monitor	28.83	4.51	28.52	4.61	- .31
Control	28.00	6.35	26.50	6.90	-1.50
Feedback	28.84	6.98	27.64	7.06	-1.20

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THEIR REASONS FOR NOT BEING MORE INNOVATIVE

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	34.61	3.68	33.61	3.99	-1.00
Monitor	34.04	2.52	34.80	3.60	.76
Control	33.90	4.30	32.70	6.34	1.20
Feedback	34.00	3.10	32.50	4.38	1.50

SUMMARY OF CHANGE IN PRE AND POST TEACHERS' PERCEPTIONS OF THEIR DEVELOPMENT OF NEW TEACHING PRACTICES

Treatment Group	Pretest		Posttest		Change
	M	SD	M	SD	
Monetary	14.46	2.36	15.00	2.30	.54
Monitor	13.45	4.02	13.76	2.80	.31
Control	13.00	2.78	15.00	2.00	2.00
Feedback	13.15	2.33	12.71	2.49	-.44

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